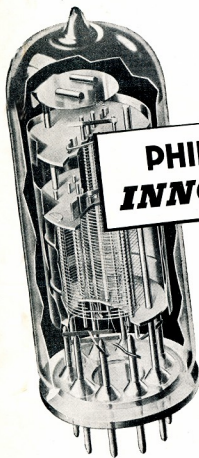


AMATEUR RADIO

JANUARY
1951

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA



**PHILIPS
INNOVAL**



Throughout the world this
symbol guides the choice
of millions

A natural for all Ham needs

In the choice of the new basic valve construction for Innoval, particular regard was taken of the need for a construction suitable not only for normal medium frequency requirements but for all high frequency applications.

Innoval, with its miniaturised, ruggedised, all-glass construction, with its internationally standardised 9-pin Noval base incorporating hard silver-plated base pins, makes it a natural choice for all amateur needs.

Innoval provides the means by which even the most complex valve types can be made in miniaturised form and the valve types already available include VHF types.

Innoval opens up new fields for the amateur experimenter.

PHILIPS *INNOVAL*

PHILIPS ELECTRICAL INDUSTRIES OF AUSTRALIA PTY. LTD.
SYDNEY — MELBOURNE — BRISBANE — ADELAIDE — PERTH



FOR THE EXPERIMENTER & RADIO ENTHUSIAST

Registered at the G.P.O., Melbourne, for transmission by post as a periodical.

9_D.

"HAM" RADIO SUPPLIERS

(KEN MILLBOURN, PROP.)

5A Melville Street, Hawthorn, Victoria

(East Kew Tram Passes Corner, opposite Vogue Theatre)

(Phone: Hawthorn 4465)

Please make Money Orders and Postal Notes payable at North Hawthorn Post Office.

BARGAINS — BARGAINS — BARGAINS

Command Receivers, 3 to 6 Mc., clean condition. Complete with Valves, less Genemotor £7/10/-
 One only 6 to 9 Mc. and One Only 150 to 550 Kc. One Only Bendix 12 volt MC26A Radio Compass, frequency range: 150 to 1500 Kc., as new £15
 Eddystone "640" Receiver, frequency range 1800 Kc. to 31 Mc.; nice condition £40
 National NC120 Receiver, band coverage 550 Kc. to 30 Mc. Band switched, crystal filter, one RF stage; as traded £35
 RA1B Bendix Receiver, covers 150 Kc. to 18 Mc., one RF stage. Converted to 6 volt heater operation; less Power Supply £27/10/-
 AR8 RECEIVERS, A.W.A., 11 Valves, 150 Kc. to 25 Mc., less Power Supply. Tested and working 100% £20
 "Ham Receiver," three bands: 40-20-10 metres. One r.f. stage 6AK5, ECH35 mixer, four i.f.s. back to back, 455 Kc. using 6U7s, 6B6 driver, 6V6 output, 6J7 b.f.o., 6H6 noise limiter, bandspread, Eddystone dial, grey crackle case. Less speaker, complete with internal A.C. Power Supply £15
 AMR300 Communications Receiver, four bands, band-switched, 1.5 to 24 Mc., variable xtal filter, nine valves, two r.f. stages, 8 meter. As new £65
 High Frequency Receiver, Australian AR301, uses three 954s, one 995, Six 6AC7 I.F. Stages at 30 Mc. Easily converted to 144 Mc. £7/10/- each
 SCR522 Transmitter Section, has two tested 322s, modulator two 12A6s Our Price £12/10/-

WANTED TO BUY:

9 or 18 volt input L.F.F. Genemotors for 15/- each

Two stage Transmitter, 25 watts, in small black crackle cabinet. Line-up: 6V6 xtal osc., 807 final, coils for 40, 20, 10 metre bands; modulator, 6J7, 6N7 into 6V6s in push pull; A.C. Power Supply. Metered stages, complete with moving coil microphone £30
 Transmitter, English, Wireless type 36, 50 watt. Three stages: 807 osc. (xtal or v.f.o.), 807 buffer-doubler, pair 807s in final. Modulator: speech amplifier 6C5, 6C5, 6C5 into pair 807s in AB2. Complete with power supply, 110 to 250 volt input, and including Microphone £40
 Moving Coil Microphones, with stand £3
 Moving Coil Microphones, less stand £2/10/-
 Kingsley FM Adaptor, 455 Kc. Transformer, Complete with valves £4
ASSORTED CRYSTALS AVAILABLE FOR ALL BANDS
 A.W.A. Radio Compass, 11 valves, Type IC5852, three bands: 275 to 1700 Kc., 2.3 to 3.3 Mc., 6 to 7 Mc. I.F. channel 532.5 Kc. No generator £12/10/-
 AT10 plug-in coil units, has two variable condensers (approx. 50 pF.) and two coils. Ideal for wrecking. £1 each.

Wavemeter, English; frequency coverage 39 to 51 Mc. EA50 Valve, Magic Eye Indicator, AC operated £6
 Wavemeter, English Marconi, frequency coverage 160 to 220 Mc., battery operated £5
 Selsyn Motors, 50 volt AC 50 cycle each £1/10/-
 TA12D Bendix Transmitter, complete with Valves. Clean condition £15
 TA12D Modulator-Power Supply. Contains two 807s, one 6F6, one 6N7, interstage driver transformer (6F6 to 807 p.p. grids, centre tapped), modulation transformer 50 watts to match 807s in parallel; genemotor 28 volts input, 550 volts output at 450 mills; easily adapted to AC operation £10
 Type A Mark 3 Transceiver, 6 volt DC operation. No spares. Nice condition, as traded £12/10/-
 Hammarlund plug-in coil units, contains two variable condensers, coil formers, etc. Price £3/10/-

Tube Special—7193s, 5/- each

0-10 Ma. Pullin Meters, 4 inch, new each 30/-
 New Meters—0-500 microamps. £1/2/6
 New Meters—0-1 Ma. full scale £1/2/6
 New Meters—0-40 0-120 Ma., separate connection £1/2/6
 English L.F.F. Units. Tube line-up: two VR135 (high freq. triodes), two VR78 (diodes), four VR65A, Eddystone Butterfly Condenser, 1 uF, 1,000 v.w. Block Condenser, Genemotor 11-12 v. input at 3.8 Amp., output 480 v. 40 Ma. Good assorted quantity of Resistors and Condensers, ideal for wrecking, condition as new £2 each
 6 feet lengths of 1/2 inch Co-ax Cable, 72 ohms, with Connectors both ends 3/-
 Jumbo 4-Pin Valve Sockets for 211, etc. each 7/6

VALVES, Tested, Out of Disposals Gear

5/- each—Bargain Price—7193, 6H6, 6SH7, 6B5.
 10/- each—2X2, 6A8G, 6C8G, 6G6, 6J7G, 6K7, 6N7, 6U7G, 6X5, 12A6, 12AH7, 12C8, 12SG7, 12J5, 879, 1629, 9003, 954, 955, 956, HY615.
 10/- each—Metal: 6SC7, 6SF7, 6SR7, 6SS7, 12SK7, 12SR7.
 10/- each—Specials (new)—6A6, EBF2, EL3, EF50, 50L6, 25L6, 25Z5.
 10/- each—Locket type: 7H7, 7C5, 7G7, 7Y4, 7E6, 7A8, 7W7, 7N7, 7A4, 7F7, 1299, 1291, 1203A, 1201, 1LD5, 1LN5, 28D7, 35Y4.
 15/- each—6SN7, 6SL7.
 813, 60/- each. 832, 50/- each.
 A large variety of 2 volt Battery Valves are also in stock.

Packing Charge on all goods over 10 lbs. in weight, 5/- extra.

WANTED TO BUY—RADIO PARTS, VALVES, TRANSFORMERS, RECEIVERS, TRANSMITTERS, Etc.

JANUARY 1951

Vol. 19. No. 1

AMATEUR RADIO

Published by the Wireless Institute of Australia,
Law Court Chambers, 191 Queen Street,
Melbourne, C.1

EDITOR:

T. D. HOGAN, VK3HX,
Telephone: UM 1732.

MANAGING EDITOR:

J. G. MARSLAND, VK3NY.

TECHNICAL EDITOR:

J. C. DUNCAN, VK3VZ.

TECHNICAL STAFF:

A. K. HEAD, VK3AKZ.
L. B. FISHER, VK3AFF.

COMPILATION:

R. W. HIGGINBOTHAM, VK3RN.

CIRCULATION:

I. K. SEWELL, VK3IK.

ADVERTISING REPRESENTATIVE FOR VICTORIA:

W. J. LEWIS,
20 Queen St., Melbourne, C.1.
Telephone: MU 5154.

ADVERTISING REPRESENTATIVE FOR N.S.W. AND QUEENSLAND:

L. W. CRANCH,
Room 302, 17 Bond St., Sydney.
Telephone: BU 3879.

PRINTERS:

"RICHMOND CHRONICLE,"
Shakespeare St., Richmond, E.1.
Telephone: JB 2419.

MSS. and Magazine Correspondence should be forwarded to the Editor, "Amateur Radio," Law Court Chambers, 191 Queen St., Melbourne, C.1, on or before the 8th of each month.

Subscription rate in Australia is 9/- per annum, in advance (post paid) and A10/6 in all other countries.

Wireless Institute of Australia
(Victorian Division) Rooms' Telephone is FJ 6997.

EDITORIAL



In this issue of "Amateur Radio" you will read with interest of the terms and conditions under which you may serve in the R.A.A.F. as a member of the Reserve.

The need is for men of all ranks and grades of experience, and the purpose of the Reserve is to create shadow forces which will be capable of quick expansion into a formidable fighting force should the occasion demand.

The article under review is clear and concise and is now put

forward for your careful consideration, bearing in mind that history seems to be slowly repeating itself and that help, to be valuable, should be given early. Any future conflicts will have a large "electronic content" and as known from experience, the value of a smoothly working communication and radar system cannot be underestimated. It is hoped that the scheme as now presented will provide the opportunities for service for which the Institute has so long been asking.

—Federal Executive.

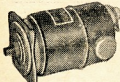
The Contents . . .

Using Tubes Above Their Self-Resonant Frequency	3	N.S.W. Division Hold Field Day at Woy Woy	8
Receiving S.S.S.C.	3	Tasmania Wins Again! 1950 Remembrance Day Contest Results	9
The Theory and Design of Speech Clipping Circuits	4	DX Countries of the World	10
Some Notes on Command Receivers	6	Stand-off Insulators	11
Proper Care of Crystal Microphones	6	DX Notes by VK4QL	12
R.A.A.F. Active Reserve	7	Ionospheric Predictions for the Amateur Bands	12
The South African International DX Contest, January, 1951	7	Fifty Megacycles and Above	13
		Federal, QSL, and Divisional Notes	16

Homecrafts

PTY LTD.

NEW YEAR BARGAINS



DISPOSAL BARGAIN

12 volt 500 watt Generators. Completely re-conditioned. Ideal for home lighting plants. Originally cost £50. Price, as illustrated, 10/6m.



METER BARGAIN

Pocket type Dual Reading Moving Coil English Electric Test Meters. 0-20v, 0-200 v scales. 200 ohms per volt. Complete with leads, as illustrated, worth £2, cut to only 19/11.



FERROCART SAPPHIRE GRAMO. NEEDLES

The lowest priced quality Sapphire Needle on the market. The English Ferrocart with over 2,000 playings; guaranteed. Trailer type as illustrated, only 10/9.



"RECORDEX" RECORD RACK. The new improved Gramo. Record Rack. Holds 25 10" or 12" records. Complete with index card and gummed identification numbers for records. Price, as illustrated, 22/6. Model to hold 50 records, 33/-.



FOUNDATION KIT

A few more available! Bakelite Cabinet, Chassis, Front Mounting Plate and Dial Assembly. As illustrated, only 39/11.



METER BARGAIN

English Moving Coil Meters. 2" scale, 200 ohms per volt. Two models available, 0-20 and 0-40 volt. Ideal for home lighting plants. Originally cost 70/-, cut to only 19/11. Cost of re-scaling and calibrating to any amperage from 0.5 Ma. to 0.50 Amp. or any voltage to 1,000 volts, 18/6 extra.

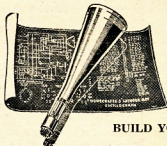
CAR SUPPRESSORS

Bakelite moulded and spring loaded. Simply push on top of spark plug, eliminates all noise. Price as illustrated, 2/3 each.



MORSE KEY BARGAINS

Brand new Army type Morse Keys. Small type, as illustrated, only 1/11. Large type, as illustrated, only 2/11.



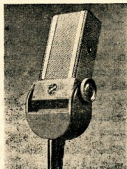
BUILD YOUR OWN OSCILLOGRAPH

BAKELITE FOUNDATION KIT

Kit includes—

- 5BP1 CATHODE RAY TUBE. Originally cost £16.
- HIGH QUALITY POWER TRANSFORMER.
- CIRCUIT DIAGRAM to build De Luxe Oscillograph.
- CABINET AND CHASSIS drilled and finished in black crackle, illustrated above.
- BAKELITE SOCKET for 5BP1 Tube

PRICE ONLY, £8/19/6



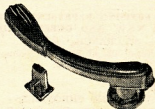
THE NEW ZEPHYR STUDIO MICROPHONE

Model 160 De Luxe High Fidelity Microphone with frequency range from 50-16000 c.p.s. Available in 50 ohms, 200 ohms or Grid type. Price, as illustrated, £27/3/9.



SUPER PICK-UP BARGAIN

Two-Trak Magnetic Pick-Ups. As illustrated, reduced from 70/- to 16/11.



FERROCART CRYSTAL PICK-UPS

Streamlined plastic lightweight High Fidelity Crystal Pick-Ups with only 1 to 1-1/8 oz. needle pressure. Price, as illustrated, only 32/11.



TRIPLE SPEED GRAMO MOTORS

Imported American synchronous type T.S. Electric Motors, 33-1/3, 45 and 78 r.p.m. Complete with Turntable as illus., £13/19/6.



CAPITOL EXTENSION SPEAKERS

In steel crackle finish Cabinet with cord and switch. Colours: Cream, Grey or Black. Price, complete as illustrated, 33/6.

COUNTRY AND INTERSTATE CLIENTS PLEASE ADD FREIGHT OR POSTAGE.

290 LONSDALE STREET, MELBOURNE

Central 4311

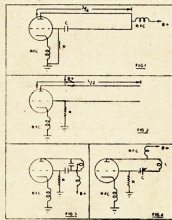
Using Tubes Above Their Self-Resonant Frequency

BY A. K. HEAD,* VK3AKZ

THE COLPITTS OSCILLATOR

To start the ball rolling, let's have a look at the usual form of v.h.f. single tube oscillators (Fig. 1). This is a Colpitts type circuit with a linear quarter wave line as tuned circuit. The feed back is provided by the interelectrode capacities (i.e. is conveniently built-in) and can be varied over a certain range by the r.f. choke in the cathode lead. As you know the quarter wave line is less than a physical quarter wave long due to the end loading effects of the grid-plate capacity.

Now when the frequency is raised by moving the shorting bar in towards the tube, either of two things will eventually happen. With a lot of tubes, as the frequency is raised, oscillation gets weaker and weaker and finally conks out. This will happen with low transconductance tubes with bases, etc., and what has happened is that the gain of the tube has dropped (because of transit time effects, etc.) until it is less than the losses of the circuits. Hence no oscillation and nothing can be done about it except maybe to pulse the tube with a higher anode voltage.



On the other hand with close spaced high transconductance v.h.f. type tubes, it may be found that the tube is still oscillating merrily with the shorting bar as close to the tube as it can get. This situation is what the tube handbooks mean when they talk about the self-resonant frequency of the tube. The only thing preventing operation at a higher frequency is the fact that you can't get the shorting bar inside the tube.

But by using a half wave line (Fig. 2) this can, in effect, be done. Fig. 2 has been drawn to emphasise the internal plate and grid leads and it is easy to see that as the frequency is raised by shortening the lines it does not particularly matter if the electrical mid-point of the line is inside the tube. If

One of the main barriers to the population of the Amateur v.h.f. and u.h.f. bands is the lack of suitable tubes. Although there are tubes in existence for all bands, it is another thing to obtain them (and another one again to pay for them). This article aims to pass on some suggestions which may be helpful in raising the useful frequency limit of tubes you may have on hand. How far up the limit can be pushed is for you to find out.

this is the case, then the grid-plate capacity and the lead inductance account for more than one quarter wave length and effectively the shorting bar (i.e. the electrical mid-point of the line) is inside the tube. Thus by using half wave lines the frequency limit can be pushed above the self-resonant frequency of the tube.

As a practical example, for a 955 in a standard ceramic socket, the self-resonant frequency is about 580 Mc. It will oscillate quite well, but there is no external circuit to couple into and no easy way of tuning. By using a half wave circuit (of which about one quarter wave is inside the tube and one quarter wave outside), a useful oscillator results which can be tuned across the 580 Mc. band by swinging a block of polystyrene in between the open ends of the line, thus changing their effective length.

LUMPED CONSTANT CIRCUITS

As line circuits are often inconvenient to tune smoothly for receiver applications, lumped constant circuits are often more convenient. The equivalent to a quarter wave line is a parallel tuned circuit (Fig. 3), and the equivalent to a half wave line is a series tuned circuit (Fig. 4).

As an example of how a series tuned circuit will permit a tube to operate above its self-resonant frequency, a 7193 was used with the circuit of Fig. 5. This differs from Fig. 4 in having the external inductance divided into two parts, but both are essentially the same circuit. "C" was a Philips' concentric trimmer and L1 and L2 represent the inductances of "1.5" of 10 gauge wire running from the grid and plate terminals of the condenser.

Now the self-resonant frequency of a 7193 is about 350 Mc., and it was found that the above circuit gave continuous operation from 250 Mc. up to 450 Mc. as the trimmer was unscrewed. This limit of 450 Mc. was not due to lack of external circuit (the trimmer had a capacity of about 8 pF. at this stage), but the gain of the tube had dropped too much to support oscillation. If the

high tension was increased to 400 volts it would operate at a higher frequency but the plate dissipation became too high. In such a case, the previous remark about pulsing the tube might be useful.

Incidentally, the equivalence between a half wave line and the series tuned circuit might be seen more easily by comparing Fig. 5 with Fig. 2.

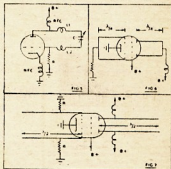
OTHER

APPLICATIONS

If in Fig. 4 the resistor between grid and ground is removed and a large resistance is connected across the tuning capacitor, then a superregen. receiver results. One disadvantage is that the quench frequency will vary as the condenser is tuned, but VK3NW has used this idea successfully on 580 Mc. with a lighthouse tube.

It will be seen that for a single tube, the series tuned circuit has the advantage of not requiring a d.c. blocking condenser. But for push pull circuits the parallel tuned circuit has the simpler d.c. connections, as illustrated in Figs. 6 and 7 of a push pull p.a. However, the series tuned (or half wave) circuit has the advantage of leaving more of the circuit outside the tube and so is easier to couple into.

Thought for today: "If you want to go higher, try series tuning."



RECEIVING S.S.C.

Readers may be interested in one method used by 6WZ for receiving s.s.c. Finding the receiver b.f.o. unreliable and the Class C Wavemeter too jerky in its tuning (who hasn't), the v.f.o. was used recently to copy the first W.A. station to use this transmission (VK6EC) and it worked very well. If yours is a multi-stage v.f.o. arrangement switching so that you can select "osc. only" or "osc. and buffers" at will. This should give you sufficient control over the amount of carrier re-insertion.

If your v.f.o. drifts so that it's hard to keep the s.s.c. tuned in, it's time you had a new v.f.o. anyway—and if it's as stable as it should be, you'll have effortless copy of s.s.c. transmissions.

—R. H. ATKINSON, VK6WZ.

* Asst. Technical Editor, 12 Peverill St., Balwyn, E.8, Victoria.

The Theory and Design of Speech-Clipping Circuits

BY K. C. SEDDON,* VK3ACS

Before building myself a modulator, I came across an article describing the theory and design of speech-clipping circuits. Being very impressed by the theoretical advantages, I decided to incorporate a similar unit when I eventually built my own modulator, and on completion it has been extremely successful.

The advantages are as follows:—

- Impossibility of overmodulation.
- Increased average level of modulation, giving effect of higher power.
- Increased intelligibility of speech and freedom from hum pick-up is obtained by the removal of the high and low audio frequencies.

A study of the way intelligibility is conveyed by speech has shown that the major power carrying components in speech are the vowel sounds (or semi-vowels such as l, m, and n). These give character to speech and a general outline of the intelligence. However, it is the consonants, which are much lower in power, that enable words with the same basic vowel sounds to be distinguished.

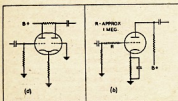


Fig. 1.—Types of Peak Clipping Circuits.

If the peak sound only is limited, the sounds immediately following the peak will be unaffected and the relative amplitude of the low level sounds increased. The fact that the vowel sounds are so basic and characteristic makes them easily recognisable in spite of the decrease in their relative amplitude. The effect is a considerable increase in the apparent volume with some distortion introduced due to the limiting of the peak sounds.

It can thus be seen that this method has more advantages than volume compression, as in volume compression the pounds immediately following the peaks are also reduced in amplitude and where they are consonants rendering the word intelligible, the increased level of any remaining portion of the word is of no advantage. Also in volume compression a finite time must elapse before the compressor comes into action and reduces the gain and hence initial peaks will not be reduced, thus causing over-modulation.

The process of clipping consists of squarely chopping off both positive and negative peaks at a predetermined amplitude. The harmonics present in the square-topped waves from the peak

sounds we cause distortion and also extend the transmitted sidebands and hence must be removed by a low pass filter following the clipper. With low frequency sounds, say 100 cycles, and a low pass filter cutting off at 3,000 cycles, up to the 30th harmonic of the 100 cycle sound will be retained. Therefore a high pass filter is included before the clipping stage with a cut-off frequency of approximately 500 cycles and only the 6th harmonic of this frequency will be retained and hence there will be less distortion. In summary, therefore, this is not the only reason for including the high pass filter, there being two more important reasons.

In any stages following the clipping stage, the phase shift distortion must be as low as possible or the peak amplitude of the output from the clipper can be exceeded. This normally requires good frequency response over the audio range from approximately half the cut-off frequency of the high pass filter to twice the cut-off frequency of the low pass filter. This effect is most noticeable at the low frequency end of the spectrum and is the main reason for including the high pass filter before the clipping stage.

Peak clipping may be accomplished in several ways which may be divided into two classes:—

- Those involving the cut-off characteristic of a tube (as used in the circuit described—Fig. 1a).
- Those involving current flow in a tube when a fixed bias has been exceeded—Fig. 1b.

In the latter case, diodes or triodes are generally used and the principle is that the biased tube element offers a high impedance until the signal reaches the bias level, above which the impedance is low. By feeding the biased element

through a high series impedance no increase in output voltage will occur once the conduction point is reached. However, this type is more complex and hence the first type was used.

With up to 10 db of clipping, the distortion present is barely noticeable while with 20 db of clipping (i.e. 10 times the audio voltage input that will give 100% modulation) the distortion is not excessive. The audio power output from the modulator is, of course, not increased by 20 db, but is increased by a considerable amount.

In addition to the increase in modulation level due to the clipper, several other advantages are claimed for the unit.

Firstly, the major part of the power in speech is below 500 cycles and it has also been shown that very little intelligence is conveyed by this portion of the spectrum. Thus, removing these frequencies, enables the modulation level of the middle range frequencies to be increased, giving a more intelligible signal.

Secondly, the higher audio frequencies above 2,500 to 3,000 cycles, while not contributing a great deal to the intelligibility, increase the bandwidth occupied and hence removing them reduces QRM. Also, removing both high and low frequencies together, retains better balance of the speech than removing highs or lows alone.

Thirdly, with low frequencies removed, no precautions against hum pick-up are required.

Fourthly, the unit described has low impedance output and can be placed well away from the modulator and transmitter without any trouble from long connecting cables, and also there is less chance of r.f. feedback if the pre-amplifier is well away from the transmitter.

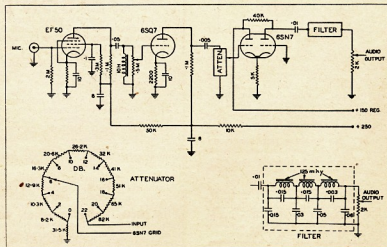


Fig. 2.

Last of all, the unit is useful when entertaining visitors with loud voices as one does not have to wind the gain control up and down to compensate for different voice levels to prevent over-modulation.

The unit described here is a modified version of a circuit described in "QST." The first stage uses any high slope pentode such as an 6X5 or 6SN7. The high pass filter is simply a 10 henry midrange filter choke in series with a 0.05 μ F. condenser connected across the load resistance of the pentode. If more lows are desired a larger choke or condenser could be used. No precautions against r.f. feedback were taken except to shield the grid lead and grid resistor of the pentode.

The next stage is a high- μ triode (6SQ7). The reasons for two high gain tubes are:—

1. The pentode has a low plate load and voltage gain is relatively low (measured gain 81).
2. The input level which the 6SN7 commences to limit the signals is approximately 4 volts r.m.s., and thus for 22 db of clipping, this means an input of over 40 volts r.m.s. to the 6SN7. (The measured gain of the 6SQ7 was 37, giving a total gain of 3,000 or 70 db for the first two tubes.)

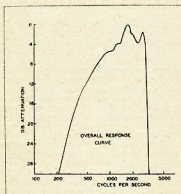


Fig. 3.—Frequency response curve of complete unit.

Following the 6SQ7 is an attenuator (Fig. 2) going from 0 to 22 db in 2 db steps. It consists of a 12 position switch with $\frac{1}{2}$ watt resistors wired across the contacts. The resistors were picked within 1% by putting two in series where necessary, although this accuracy is not really required.

The clipping is done by the cathode coupled 6SN7, the first section clipping negative peaks that drive the grid beyond cut-off. Positive peaks produce positive peaks across the cathode resistor and cause the second half of the tube to be driven beyond cut-off, hence clipping the positive peaks. Originally, the 150 volt supply for the 6SN7 clipper was obtained from a voltage divider, consisting of two 50,000 ohm resistors, but it was found that the output from the unit decreased as the degree of clipping was increased. This was due to

the 6SN7 drawing higher average current when clipping and hence reducing the plate supply voltage. This difficulty was solved by using a VR150/30 in the power supply.

The three section "m" derived filter gives a very sharp cut-off at 3,000 cycles. The inductances were home-made but will be available soon from a city firm. The condensers were chosen within 1% tolerance, but probably 5% would be close enough.

The filter is terminated in a 2,000 ohm potentiometer which is placed at the back of the unit as it should not be shifted after initial adjustment unless the transmitter input is varied.

The maximum output of the unit was measured as 1.25 volt r.m.s. or 1.77 volts peak.

The unit was constructed on a 10" x 6" x 21" chassis. The low pass filter was assembled on a 9" x 3" strip of aluminium and fitted over an 8" x 2" hole cut across the chassis. The 125 m μ H. chokes were wound on 7/16" diameter slug tuned formers and were mounted vertically on the 9" x 3" strip at approximately $\frac{1}{4}$ " centres. Originally aluminium shield cans were fitted over the chokes, but these reduced their Q and as there was no apparent magnetic coupling between them, they were left unshielded.

The adjustment of the unit is best done with a c.r.o. using a trapezoidal modulation pattern. With the attenuator switch on 22 db and the first gain control well advanced, speak into the mike and adjust the output control until modulating nearly 100% on peaks. Then put the attenuator switch to 0 db and adjust the first gain control until again nearly modulating 100% on peaks. While performing this operation, it is necessary to maintain your normal speaking conditions (voice level and distance from the microphone) and also to maintain them in the future when using the unit if you want to know exactly how much

clipping you are using at any given time. This completes the adjustment of the unit, the only control that need be touched is the attenuator when it is desired to alter the clipping level.

My own practice has been to use about 10 db of clipping for normal work and when conditions are bad to use 18 to 20 db of clipping.

Because of the high gain of the unit, it is advisable to speak fairly close to the microphone in order to keep the level of background noises to a minimum.

— . . . —

RADIO & ELECTRONICS (N.Z.) LIMITED

The above wish to advise that as and from 1st December, 1950, they will take over the complete interest of the Australian monthly technical journal known as "Australasian Radio World."

It is their intention to produce the December issue as a composite one under the old title, and then change the name to "Australian Radio and Electronics" (incorporating Australasian Radio World) as and from the January 1951 issue.

To facilitate the above a new company known as Radio and Electronics (Aust.) Pty. Ltd. is being formed. The parent Company already produces "Radio and Electronics" in New Zealand—which also circulates on the Australian market—and it is their intention to cease importing the New Zealand journal, and to produce the Australian edition of "Radio and Electronics" in lieu thereof, whilst maintaining the same high standard. With the close liaison with New Zealand and other overseas tie-ups, engineers, servicemen, dealers, hams and hobbyists are assured that the articles will bring to them the latest developments for the advancement of radio and electronic knowledge.

SEASON'S GREETINGS

and make your YL or XYL a New Year Gift of a
Manicure Palette, 1/- each Post Free

★ BATTERIES

★ VALVES

★ CONDENSERS, ETC.

★ TOYS

★ RADIO

★ ELECTRICAL GOODS

ALL OBTAINABLE FROM—

M. J. CROMPTON

18 HIGH STREET, GLEN IRIS, VIC.

Phone: WM 6153

COUNTRY MAIL ORDER SERVICE

Some Notes on Command Receivers

BY DON B. KNOCK,* VK2NO

Probably one of the best bargains in surplus war radio material has been the Command series of equipments, available in Australia, unfortunately in limited quantities only, but on disposals counters in profusion in U.S.A. and Britain. In case the hopeful reader may run across such receivers, especially of course, if fortunate enough to be travelling overseas, a few words about frequencies and possible Amateur usage may be of interest.

First on the list of these attractions has been the model popularised two years ago in the pages of "QST" as the "Q Fiver". This simple double conversion application to a narrow band-pass low frequency i.f. results in a high degree of selectivity, of material advantage to the 14 Mc. phone man in particular. This model is the BC453, and in passing it is worth mentioning that the circuit of all these Command receivers is the same. Each is comprised of a 6-valve superhet with one i.f. stage, mixer-oscillator, two i.f.s., detector-beat oscillator and audio output stage. BC453 tunes from 190 to 550 Kc. in the signal circuit and the i.f. is at 85 Kc. Obviously, this unit can be used in conjunction with any receiver having an i.f. falling within the 190-550 Kc. range.

TUNING RANGE AND INTERMEDIATES

Most of our present-day single i.f. receivers are in the region of 460 Kc. With receivers of the BC348 series, however, the consideration is different, for here the i.f. is at 915 Kc., and so the "Q Fiver" of the BC453 type does not suit. There is a model that does, however, but whether or not you are likely to run across one in Australia is a doubtful point. This is the BC946B, a Command receiver that covers the regular broadcast range, i.e. 520 to 1500 Kc. The i.f. of this model is not at 85 Kc., but at 239 Kc. This is yet a low frequency and the band-pass characteristics of the i.f. amplifier are variable by push-rod operation of the coupling between primaries and secondaries as in the BC453. So, if you don't prefer to use this BC946B solely for entertainment purposes, it makes an excellent companion "Q Fiver" for the BC348 kind of receiver having i.f. at 915 Kc.

Next on the useful list of Command receivers is the BC454, and this tunes from 3 to 2 Mc. with i.f. at 705 Kc. As this stands, it will make an excellent 80 metre receiver and, of course, is applicable with crystal controlled converter ahead of it for higher frequencies in the now popular set-up. Better still, with a crystal-locked converter for 20 and 10 metres ahead of it, will be the BC455, a model tuning between 6 and 9.1 Mc. and with the i.f. at 1415 Kc. Another model, the BC495, tunes the same range and has the i.f. at 2830 Kc. A little figuring with available crystals in relation to tuning range will reveal many useful possibilities. Remember also, that all these Command receivers follow a similar design; that both the

i.f.'s. and the r.f. coils are plug-in items, and that the assembly lends itself to variations to suit one's own needs.

POWER SUPPLIES

Valves used in the Command receivers are all 12 volt types, namely, 12SK7, 12K8, 12SR7, 12A6. They are wired in series-parallel heater connection for use from the aircraft 24 volt d.c. supply. A generator, shock-mounted at the rear, provides h.t. at 250 volts. In setting out to use these receivers on a.c., many Amateurs go to the laborious trouble of re-wiring the heaters in parallel for application from a 12 volt transformer. One might as well use two 12 volt heater transformers to give you the normally required 24 volts heater supply by seriesing the secondaries, or better still, apply a 24 volt transformer. In any case, the latter is the simplest answer, for it isn't an easy matter to get at the valve heaters for re-wiring. It entails hanging chokes and things over the sides of the chassis in order to get at the sockets. It is easy enough to make up, or get made, a heater transformer handing out 3 amperes between

24 and 28 volts. With a dry rectifier power pack to accompany the 24 volt transformer, that's all there is to it. You can, of course, if of ample rating, draw on the accompanying receiver power unit for the h.t., in which case the 24 volt heater transformer is the only item extra.

With a Command receiver powered as suggested, a converter to be used with it can draw power thence by using 12 volt valves in series-parallel heaters, or 6 volt types similarly with ballasting resistors. The Command receivers can be used without any alteration at all from a 32 volt home lighting plant, if the dynamotor on the receiver is of the 28 volt and not the 12 volt kind. Some of the receivers may have been fitted with 12 volt types and the valves wired in parallel heaters, but such instances are rare.

Finally, for the benefit of lucky people who may have acquired Command units, the most complete conversion article to be perused anywhere appeared in "Short Wave Magazine" (England) in the issue for September, 1948. This article leaves nothing to guesswork or imagination. Neither do the advertisements in the same magazine where London dealers offer the receivers in all ranges complete with valves at 25/- each—or a set of three for 70/-!!!

PROPER CARE OF CRYSTAL MICROPHONES

The following information was extracted from G.E.'s "Ham News," May-June, 1950.

Crystal microphones are likely to lose their sensitivity and frequency response during hot humid weather. Although microphones are sealed against moisture, moisture may creep in and damage the crystal element.

For some time I have noticed the modulation percentage in my transmitter gradually go down until I could barely modulate 50% with the audio gain wide open. A careful check of the speech amplifier and modulators indicated no trouble there. The microphone was then suspected because of the unusually damp weather that has existed here all summer. I was about to discard the mike or send it to the factory for repairs, but I decided to try a little stunt as a last resort.

The microphone was placed in a clean, dry, airtight can with one pound of fresh silica gel obtained from a local radio and refrigeration supply house. In twenty-four hours the mike worked as good as new; in fact, it works better now than it has in two years.

I would recommend that this trick be tried on all crystal microphones which have been subjected to excessive moisture or humidity before discarding. In fact, I believe it would be good practice to store the mike in this manner when not in use, particularly during the hot humid months of summer.—W4AEE.

[Ed's. Note.—The following complete story on the proper care of crystal microphones appeared in a recent Electro-Voice release—Lighthouse Larry.]

"What causes crystal microphones to lose sensitivity? To answer this, let's first see what the crystal is made from.

"Rochelle salt crystals are formed synthetically. When the rochelle salt

crystal is grown, it takes four molecules of water of crystallisation for every molecule of sodium potassium tartrate. In humid climates, the crystal has the potential of absorbing moisture and the result is leakage resistance or low output. Placing the microphone or cartridge in a silica gel desiccator will reduce this excess moisture, but there is the possibility that if left in too long, the moisture content of the crystal might be lowered to the point of damage.

"If the humidity is less than 23% for a long period, you will get dehydration or drying out. If the temperature rises to 127°F. the sodium potassium tartrate dissolves into the water of crystallisation. In other words, if a crystal microphone gets too hot, too dry or too wet, it won't work.

"These statements seem to run down devices using rochelle salt crystals. This is not true. If the humidity is between 23% and 86% except for brief periods, crystals will stand up fine. If the temperature is below 127°F., no trouble will result. That's why the manufacturer puts a guarantee on crystal devices and caution is given about heat. Occasionally crystals are damaged when the limits mentioned above are exceeded.

"Rochelle salt crystals are treated to prevent damage from moisture. E-V has given an additional protection for added life on crystal cartridges. The case is completely filled with silicone to prevent moisture from getting to the crystal. Leads are a bad spot for moisture to enter and the E-V silicone treatment eliminates this fault. E-V crystal devices are all thoroughly moisture-inhibited, the result of intensive moisture-proofing research." (Electro-Voice "Report to the Distributor," August 15, 1949. Reprinted by permission of Electro-Voice, Inc.)

* 43 Yanko Avenue, Waverley, N.S.W.

R.A.A.F. ACTIVE RESERVE

ADMINISTRATIVE POLICY

1. The basic object of the Active Reserve is to enable unit commanders of certain specified units to obtain their requirements of personnel (by rank and musters) necessary to bring their units to provisional war establishments. It is intended that these personnel should be obtained, if possible, from the local district.

2. At the present time, there should be little difficulty in securing ample numbers of war-trained men who are prepared to accept the obligation of being available for immediate call-up on mobilisation being ordered.

3. The unit commander concerned is responsible for selecting and enlisting the best available volunteers—such volunteers can be grouped as:—

- (a) Ex-R.A.A.F. personnel.
- (b) Ex-Navy and Army personnel.
- (c) Qualified men with no Service background.

It is not intended to restrict the unit commander in any way his choice, or priority of selection of these personnel—he is expected to select the best offering. In those cases where insufficient personnel of an acceptable standard are offering locally, area commanders may obtain the unit's needs from any convenient locality.

4. Some may be fully and completely qualified to fill establishment vacancies—others may not. In the case of the former, their service at units will be entirely productive. However, in the case of the latter, the unit commander will no doubt point out that he (the active reservist) will need some train-

ing in order to qualify for his post, and that a maximum of 28 days per annum is available for him to do such training at the unit. If he cannot give the necessary time, it may not be worth while enlisting him. It is imperative that it be clearly understood by all concerned that there is no fixed or obligatory period of training—the 28 days is the maximum period for which pay may be given each year.

CONDITIONS OF SERVICE

5. Personnel will be appointed or engaged for a period of five years followed by five years on the General Reserve.

6. Personnel will be liable for immediate mobilisation in the event of an emergency or on the outbreak of war. They will be subject to such other general obligations as reservists in accordance with applicable Air Force orders.

7. Personnel in the Active Reserve will be subject to the conditions and rates of pay at present in force for members of the Active Citizen Air Force. Payment will be approved up to a maximum of 28 days per year; for attendances for periods of less than a full day, payment will be calculated on a pro-rata basis.

8. Personnel will be provided with uniforms and Service clothing rank.

9. Ranks on appointment or enlistment in the Active Reserve will be in accordance with those provided in the provisional war establishments. It may not be possible for all members to be appointed or enlisted in their former wartime ranks, but in the event of an

emergency or outbreak of war such personnel will not be prejudiced nor superseded by members who choose to remain on the General Reserve. When a member completes his service on the Active Reserve he will be transferred to the General Reserve in either his former rank or such higher rank as he may attain whilst on the Active Reserve. Members without former R.A.A.F. service will be appointed or engaged with the normal commencement rank for the Permanent Air Force, i.e. Pilot Officers and Aircraftmen.

PUBLICITY

10. Publicity for the Active and General Reserve will be incorporated in the Australia-wide recruiting campaign. Separate instructions have already been issued to area authorising unit commanders and area commanders arranging with State Directors of Recruiting suitable local publicity for the Active Reserve.

RECRUITING

11. Personnel will be recruited from either:—

- (a) Present members of the R.A. A.F. Reserve;
- (b) Direct from civil life, with or without former defence service and experience.

QUALIFICATIONS FOR APPOINTMENT AND/OR ENLISTMENT

12. Retirement will be governed by the following retirement ages:—

Rank	GD	Other Branches
Flight Lt.	45	54
Sq. Leader	48	54
Wing Cdr.	53	57
Group Cpt.	55	60

Airmen: 55 years for all musters, except aircrew for whom retiring age will be 40 years.

13. Personnel selected for exclusive employment as pilots should not be over the age of 32 years at the time of appointment or enlistment.

CIVILIAN EMPLOYMENT

14 (a). **Reserved Occupations.**—In due course it may be necessary to debar from service on the Active Reserve those persons who are in reserved civil occupations, e.g. civil airlines, aircraft industry, etc. At this stage, however, it is not clear which persons will be prevented from leaving their occupations in the event of war. In the meanwhile, persons who would obviously be unavailable on the outbreak of war are not to be enlisted.

(b) **Employer Relationship.**—Employers are not compelled to grant leave of absence during their absence on Air Force service. The most that can be expected is that employers will follow the example set by the Government in releasing members of the Public Service and subsidising their pay. Personnel attending for Air Force duty, therefore, should be provided with an official statement verifying their attendance.

MEDICAL

15. Personnel appointed or enlisted in the Active Reserve will be subject to medical fitness to the same standard as laid down for P.A.F. members of the appropriate categories or musters.

The South African International DX Contest, January, 1951

This Contest is open to all Licensed Hams in the world and is sponsored by the South African Radio League.

GENERAL

1. This Contest is open to all Licensed Hams in the world, but the prizes can only be won by a member of a recognised section of the I.A.R.U.
2. All countries as listed in the official countries list of the A.R.R.L. 1950 Handbook will be eligible.
3. The above is also the official country list for scoring.

4. The Contest will take place on 20th January, 1951, at 00.01 hours Saturday, to 24.00 hours G.M.T., Sunday, 21st, on c.w. only.
5. From 00.05 Saturday, 27th January, 1951, to 24.00 hours Sunday, 28th, on telephony.
6. The bands to be used will be the 40, 20 and 10 metre bands.

RULES

1. A contestant is bound by the rules governing this Contest.
2. Contacts with unlicensed and Government stations is forbidden.
3. A contestant must submit log sheets which must contain an analysis and a signed declaration.

4. An incomplete log or the omission to submit an analysis or failure to make the declaration will disqualify the contestant. An incomplete entry will not count as points.

5. The judging will rest with the Contest Committee, S.A.R.L., and in cases of dispute the decision of the Chairman will be final.

6. Serial numbers comprising 6 (six) figures for c.w. and 5 (five) for telephony as the case may be. The first three figures for c.w. or two figures for ph will be the report.

7. Off band operation will disqualify the contestant.

8. Cross band operation is not allowed.
9. Scoring. The method of scoring for each band is as follows: ZS Stations score 2 points for working other ZS Stations and 5 points for contacts in other countries as listed in A.R.R.L. list. The multiplier is the number of countries worked on all

bands. Rest of the world work ZS Stations only and score 5 points per station worked, with a multiplier of total number of ZS divisions worked on all bands.
10. Serial numbers will change with each contact. When you work your first station your number will be the RST report plus any three figures. Your second contact the number will be RST plus the last three figures of the first contact. You continue to use this method throughout the contest. For example:

Number Sent	Number Received
559111	559777
559777	559802
559802	559815

11. Logs are to be sent to the following address: Contest Committee, P.O. Box 5911, Cape Town, South Africa, and must arrive by 30th April, 1951.
12. The declaration will be as follows: I hereby declare that my station was operated strictly in accordance with the conditions and rules of this Contest, and I agree to abide by the decision of the Chairman in the event of dispute.

13. The Log Sheets must be in the following form:

S.A. INTERNATIONAL DX CONTEST, JAN. 1951						
Name	Call Sign	Country	Pla.
Address					
Date and Time Cont.	Band Used	Call Sign	No. Sent	No. Recd.	Country	Pla.
G.M.T.						

14. An analysis must show the following:—
Number of countries worked.
Number of contacts.
Number of points.
Number of bands worked.

PRIZES

The winners of each section in South Africa will receive a DX Cup together with a certificate, the runner-up will receive a certificate. Certificates will also be awarded to the top scorers in each country.

N.S.W. Division Hold Field Day at Woy Woy

Once again the Annual Woy Woy Field Day (held on Sunday, 26th November, 1950) has fully maintained its reputation as one of the brightest one-day functions held in N.S.W. Active preparations commenced some months ago when that energetic trio—2KR, 2GA and 2RU—got their heads together and submitted plans to Council for the big fests. It was expected that the function would supersede last year's effort and this hope was realised when over 150 members and their families and friends turned up at Woy Woy despite the early prospect of a dismal day. Fortunately the weather turned out favourably and full advantage was taken of this.

Although timed to start at 11 a.m., there was a huge gathering of the gangs who had determined to get in early for a good "earbash" with some of the "blokes you work, but rarely see or meet." Among the registrations the following were noted:—VKs 2EF, 2AJQ, 2ACD, 2ARF, 2AXZ, 2ARY, 2OF, 2AJB, 2YC, 2HZ, 2RU, 2ZP, 2KP, 2DY, 2LY, 2GA, 2XU, 2AVO, 2AMW, 2SF, 2UY, 2AAI, 2AIO, 2AYE, 2EO, 2AYP, 2ARV, 2AMM, 2WH, 2RF, 2WF, 2AX, 2YL, 2PZ, 2KF, 2CS, 2XY, 2ADT, 2KZ, 2FP, 2AHA, 2MM, 2CE, 2GW, 2ZC, 2AGD, 2VW, 2JZ, 2WJ, 2QZ, 2XT, 2EG, 2OA, 2YM, 2IT, 2PU, 2AAM, 2VI, 2MQ, 2FO, 2HO, 2AET, 2NX, 2EH, 2AOA, 2XX, 2IC, 2RQ, 2ARN, 2YR, 2ADW, 2CZ, 2AGN, 2GH, 2ACV, 2ACW, 2AAB, 2ASW, 2VL, 2XH, 2ARD, 2LX, 2ZW, 2AEZ, 2LS.

The country zones were well represented by members from Inverell, Forbes, Dubbo, Bellingen, Cessnock, Wollongong, Coffs Harbour. An overseas visitor in the person of VK9GW was welcomed. The Newcastle gang turned out in great style under the leadership of their President, 2CS, and it seemed that the Hunter Branch were holding their annual convention.

Registration duties were ably managed by 2HZ, while President 2YC "went to town" meeting all members and interesting them in some intriguing guessing competitions. An alfresco lunch occupied the first part of the morning and, thanks to the wonderful kitchen effort of Mrs. Hardman (XYL of 2KR) and 2OF, there was full and plenty for all. Indeed, tea seemed to flow all day long and the gang took full advantage of it. For the harmonics, there was a copious supply of "lolly water" and milk.

Two transmitters were hidden for the competition, one on 144 and the other on 3.5 Mc. The hunt was started at 2 p.m. and the 144 Mc. job was unearthed by 2AAN and party in 23 minutes. Second to locate was 2AGN who arrived one minute behind 2AAN, with 2AAB close on his heels.

BY D. E. EVANS, VK2AYE

The 3.5 Mc. proposition proved a more difficult job and it took 2SF and party 70 minutes to run it to ground. In this case the runners-up were also close, 2XU completing the course in 71 minutes with 2XT a few seconds later. The return to base was accomplished in remarkably fast time as a signal from one of the boys indicated that the broaching of a 14 watter was imminent.

An interesting innovation was the Amateur Quiz (appended herewith). This was won by 2CS who turned in 8½ correct answers out of 10, and the runner-up was 2ZC with a score of 8½.

In the L/C circuit competition, the oscillator was set on 7050 Kc. and the nearest guess was provided by 2ACW's YL who guessed 7025 Kc. Associate Horrie Oakes ran second with 7080 Kc.

A recording was played which gave short "bursts" of contacts on 7 Mc. band

and contained twenty-three voices. This was won by 2AHA with a return of 11 correct, followed by 2ADT with a score of eight.

The winners of the lucky numbers for ladies and gentlemen, call books and disposals raffles were announced.

While the above events were being completed, a lucky dip was being thoroughly explored at 6d. a dip and some of the finds turned out to be amazingly good value. There were tubes in plenty, one lucky gent pulling out a good 813 while there seemed to be an endless supply of 607s and smaller fry. Headphones also came to light and a couple of "booby" traps were unearthed. It was amazing to watch some of the "old hands" feverishly digging around in the sawdust and then taking their place in the queue for another go. While the dip was in progress, Jim Corbin gave a running commentary from the stage of the prowess of the various "dippers" and announced the nature of their finds.

Main event of the afternoon was the presentation of prizes and Jim Corbin delegated this pleasant duty to Lionel Swain, President of the Hunter Branch. Lionel prefaced the job with a happy remark or two, possibly prompted by the fact that the Hunter Branch had almost scooped the pool and shown those city slickers a few points, and called the lucky winners to the stage for their prizes. On the completion of presentations, President Jim Corbin made a brief address, the main point of which was an appeal to the XYLS to allow the OM to be more active in the coming year—particularly as they had brought them to Woy Woy for the day!

The thanks of the Division are deservedly due to the Committee who implemented the programme—Cec, John and Major—who should be quite happy about the outcome. To Mrs. Hardman and Jack Francis, who did a trojan job in the kitchen, everybody is indebted.

The next outstanding event in the Division Calendar will be the Hamfest during the week-end of the National Field Day. An attractive programme has been arranged and it is hoped that members will endeavour to get set for portable operation on the Field Day and arrange individual picnic parties during which contacts may be made and logs recorded. The Council will appreciate an effort on the part of members to place this Division in a leading position in the Contest.

N.S.W. FIELD DAY RADIO QUIZ

1. What was the call sign of the first Australian Station to contact a DX station (over 2,000 miles) on the 50 Mc. band?
2. What is a "Discriminator"?
3. Roy Fox is the operator of a rare DX Station. What is his call sign?
4. Who is the Federal President of the W.I.A.F.
5. What does "Nagasaki's Constant" concern?
6. What is "Scott's Note"?
7. In the late 30's an Australian, world famous in Amateur Radio, was killed while experimenting with Television. Who was he?
8. Approximately how many materials are used in the manufacture of radio valves?
9. What are the Amateur prefixes for the following countries: Turks and Caicos Islands, Swan Island, Christmas Island, Vatican City, Bulgaria?
10. What is an "Endfire" Array?

(Answers on Page 13)

DURALUMIN TUBING FOR WIRELESS AERIALS

Stocks Now Available for Immediate Delivery

ALL DIAMETERS $\frac{1}{4}$ " TO $1\frac{1}{2}$ " IN WALL GAUGES 16-18-20

Price List on request.

GUNNERSSEN ALLEN METALS PTY. LTD.

67 YARRA BANK ROAD, SOUTH MELBOURNE

Phone MX 4621 (5 lines).

Telegrams: "Metals," Melbourne.

TASMANIA WINS AGAIN

RESULTS OF 1950 REMEMBRANCE DAY CONTEST

Despite the fact that there was some preliminary misunderstanding with respect to Rule 1—the duration—of the 1950 Remembrance Day Contest, which was incorrectly published in the August issue of "Amateur Radio," the Contest got away to a flying start with greater activity than in any previous year. Although VK7 have won again, closely contested by VK6, the statistics published below indicate clearly that the winning State was far from being the most active participant and won by virtue of the fact that their low State Amateur licensee figure gave them a high multiplier number for the percentage of logs sent in.

Comparison of the logs received with the licensed Amateurs in VK6 and VK7 shows an approximate percentage of one third. Taking, for example, the VK2 Division with the highest State Amateur licensee figure—992 at the time of the Contest—and assuming that the logs received had been one third of this figure, VK2 still could not have won the Contest!

It appears to be impossible for the larger States to win, indicating that something must be done to the scoring system to give a more even chance to all States. Your suggestions will be gladly received.

Generally speaking the standard of the logs sent in was good though much extra work had to be done by the Contest Committee where members had not summarised their logs fully.

The percentage of logs sent in was disappointing, necessitating giving entrants the benefit of the doubt where there was no log to check against. Why don't you send your log in and help your State score even if you have not had many contacts?

Due to conditions there was very little activity on the 28 Mc. band, most of the operating being confined to the 7 and 14 Mc. bands with quite a deal of activity on the 3.5 Mc. band. Had the 28 Mc. band been open the results could have been quite different.

The time factor involved in having these results ready in time for the January issue of the magazine which, because of the Christmas and New Year holidays, goes to press much earlier than usual, coupled with the fact of a shortage of space in the magazine, has made it impossible to publish more than the top twenty entrants in the Contest. However, Federal Executive would like to thank all those who assisted in making this Contest a success for 1950.

Our hearty congratulations go to Tasmania who keep the Trophy for the second year running.

INDIVIDUAL SCORES

Individual scores of the top twenty in each State are listed below. The figures represent in the following order: Call, Type of Emission (D—phone and c.w., P—phone only, and C—c.w., only), Bands Used, Contacts, and Points scored.

NEW SOUTH WALES

VK2PA	O	4	237	621	VK2DO	O	3	121	296
VK2EO	O	4	192	283	VK2OA	O	2	108	292
VK2ZC	O	4	169	493	VK2OE	P	3	117	289
VK2BN	P	3	153	436	VK2AP	O	3	103	278
VK2SH	O	3	153	411	VK2OT	P	3	104	270
VK2ADT	O	4	146	497	VK2EQ	O	3	96	258
VK2WH	O	3	153	333	VK2AM	O	3	94	229
VK2SM	P	2	123	336	VK2TN	O	3	84	221
VK2AMV	O	3	128	334	VK2PQ	O	3	77	215
VK2BO	O	3	110	314	VK2XU	P	2	86	207

VICTORIA

VK3RK	O	3	293	498	VK3ARL	P	3	117	284
VK3RD	O	3	177	465	VK3AWH	O	2	85	267
VK3ADP	O	3	146	373	VK3PH	C	2	92	263
VK3IG	P	3	141	367	VK3RH	O	2	89	245
VK3PF	O	3	145	354	VK3JZ	O	2	100	243
VK3BK	O	3	130	367	VK3A	O	2	84	223
VK3ATN	O	3	121	304	VK3AP	O	2	76	194
VK3JE	O	3	96	200	VK3KC	P	1	83	171
VK3DG	O	2	116	298	VK3HG	O	2	30	141
VK3ZC	C	3	118	297	VK3YS	C	3	31	128

* Non-Member of W.L.A.

QUEENSLAND

VK4QL	C	3	169	428	VK4SE	O	1	110	223
VK4TU	O	2	177	419	VK4RF	O	1	100	217
VK4F	P	2	148	365	VK4SC	P	1	66	189
VK4FN	P	1	143	368	VK4PP	P	1	59	163
VK4FH	P	2	137	358	VK4AJ	O	2	59	163
VK4HQ	O	2	138	347	VK4DI	P	1	56	106
VK4UG	O	2	102	247	VK4GH	O	2	69	202
VK4AI	O	2	137	346	VK4FP	P	1	32	92
VK4RW	P	1	100	251	VK4JF	C	3	30	43
VK4BG	O	2	102	238	VK4LB	P	2	21	43

* Non-Member of W.L.A.

SOUTH AUSTRALIA

VK5RN	P	2	164	417	VK5RR	O	2	109	229
VK5OU	C	3	132	380	VK5KE	O	2	99	230
VK5CT	O	3	155	365	VK5MD	O	2	96	224
VK5NR	C	3	128	348	VK5LQ	O	2	84	211
VK5EN	P	2	130	345	VK5MK	P	3	95	210
VK5PM	O	3	127	327	VK5HI	O	1	67	196
VK5CF	P	2	138	313	VK5LL	O	2	67	181
VK5AX	P	2	126	296	VK5WP	O	2	64	171
VK5CO	O	2	169	286	VK5GL	P	2	62	161
VK5JS	C	3	101	263	VK5RH	O	2	61	161
VK5LC	W	2	102	238					

W was disqualified for incorrect points scoring system.

WESTERN AUSTRALIA

VK6RU	O	3	232	558	VK6SA	C	2	24	58
VK6RW	O	2	211	492	VK6WZ	C	1	16	33
VK6JT	O	3	203	484	VK6KX	O	1	19	36
VK6PL	O	3	191	467	VK6MG	P	2	17	25
VK6KI	O	3	187	448	VK6IM	C	1	9	24
VK6MR	O	3	147	357	VK6LM	P	1	9	21
VK6AS	O	3	57	132	VK6TA	O	2	8	21
VK6LJ	C	2	44	84	VK6RW	P	1	7	19
VK6DW	O	3	37	84	VK6WM	C	1	7	19
VK6GJ	P	2	25	60	VK6MO	P	1	7	15

TASMANIA

VK7BK	O	3	392	532	VK7MC	P	1	76	141
VK7BH	O	3	282	322	VK7DL	P	2	53	128
VK7FP	O	3	162	494	VK7LE	P	2	50	103
VK7OM	O	3	134	232	VK7LZ	O	2	34	95
VK7AL	O	2	112	228	VK7LD	O	2	46	89
VK7LJ	O	3	111	285	VK7LA	O	2	44	89
VK7RL	P	3	108	270	VK7BQ	P	2	33	66
VK7RY	C	3	78	159	VK7KC	P	2	23	62
VK7RH	O	2	76	150	VK7CT	O	2	21	42
VK7IL	O	3	77	148	VK7AB	P	2	28	60

NEW GUINEA, Etc.

Logs were received from three VKs which precludes them becoming eligible to contest the Trophy.

LISTENER'S LOG

HERS-195 E. Trebilcock O 3 116 299
A Check Log was received from VK0LG—Thanks OM!

	VK2	VK3	VK4	VK5	VK6	VK7	VK9
Eligible logs received	79	46	25	67	60	37	3
Licensed Amateurs at time of Contest	992	908	306	308	185	95	29
Multiplier	0.079	0.051	0.081	0.217	0.324	0.389	
Average of first six logs	484.1	399.0	380.8	363.6	467.6	400.8	
Final State score, 1950	38.24	26.35	36.84	78.90	151.5	155.9	
Final State score, 1949	16.16	10.98	16.3	26.77	49.47	74.59	
6 Place for 1950	5	3	4	3	2	1	
6 Place for 1949	5	3	4	3	2	1	

Low Drift Crystals

FOR AMATEUR BANDS

ACCURACY 0.02% OF STATED FREQUENCY

3.5 Mc. and 7 Mc.

Unmounted £2 0 0

Mounted £2 10 0

12.5 and 14 Mc. Fundamental Crystals, "Low Drift," Mounted only, £5.

Spot Frequency Crystals Prices on Application.

Regrinds £1 0 0

THESE PRICES DO NOT INCLUDE SALES TAX.

MAXWELL HOWDEN
15 CLAREMONT CRES.,
CANTERBURY, E.7,
VICTORIA

BUY YOUR DX FRIEND A
YEARLY SUBSCRIPTION
TO
"AMATEUR RADIO"

DX Countries of the World

The list of countries as hereunder, and as amended from time to time in Federal Notes, is the Official List to be used in connection with the issue of the Australian DX C.C. Award, and is also the official list used by the A.R.R.L. for their Award.

The list below shows first the Country, the Zone number in parenthesis (as used by the "CQ" W.A.Z. Award) and the Amateur Prefix.

Aden and Socotra Island (21)	VS9	Cuba (8)	CM, CO	Kenya (37)	VQ4
Afghanistan (21)	YA	Cyprus (20)	(MD7), ZC4	Kerguelon Islands (39)	FB8
Alaska (1)	KL7	Czechoslovakia (15)	OK	Korea (25)	HL
Albania (15)	ZA			Kuwait (21)	(VT1)
Aldabra Islands (39)		Denmark (14)	OZ	Laccadive Islands (22)	VU4
Algeria (33)	FA	Dodecanese Islands (Rhodes) (20)	SV5	Lebanon (20)	AR8
Andaman & Nicobar Is. (26)	VU5	Dominican Republic (8)	HI	Leeward Islands (8)	VP2
Andorra (14)	PX			Liberia (35)	EL
Anglo-Egyptian Sudan (34)	ST	East Island (12)		Libya (34)	(MC1, MD1, MD2, MT2)
Angola (36)	CR6	Ecuador (10)	HC	Liechtenstein (15)	HE1
Antarctica (13)	KC4	Egypt (34)	(MD5), SU	Luxembourg (14)	LX
Argentina (13)	LU	Elre (Irish Free State)	EI		
Ascension Island (36)	ZD8	England (14)		Macau (24)	CR9
Australia (inc. Tas.) (29, 30)	VK	Eritrea (37)	(MD8), M16	Macquarie Island (30)	VK1
Austria (15)	(MB9), OE	Ethiopia (37)	ET	Madagascar (39)	FB
Azores Islands (14)	CT2			Madeira Islands (33)	CT3
		Faeroes, The (14)	OY	Malaya (28)	VS1, 2
Bahama Islands (8)	VP7	Falkland Islands (13)	VP8	Maldives Islands (22)	VN9
Bahrain Island (21)	MP4	Fanning Island (Washington Is.)	VR3	Malta (15)	ZB1
Baker, Howland & Am. Phoenix Islands (31)	KB6	Fiji Islands (32)	VR2	Manchuria (24)	C9
Balearic Islands (14)	EA6	Finland (15)	OH	Marianas Is. (Guam) (27)	KC6
Barbados (8)	VP8	Formosa (24)	C3	Marion Is. (and Prince Edward Is.) (39)	ZS2
Basutoland (38)	ZS8	France (14)	FN	Marshall Islands (31)	KX6
Belgian Congo (36)	OQ5	French Equatorial Africa (36)	FQ	Martinique (38)	FM
Belgium (14)	ON	French India (22)	FI	Mauritius (39)	VQ8
Bermuda Islands (5)	VP9	French Indo-China (26)	FO	Mexico (8)	XE
Bhutan (22)		French Oceania (Tahiti)	FF	Midway Island (31)	KM6
Bolivia (10)	CP	French West Africa (35)	FF	Miquelon & St. Pierre Is. (5)	FP
Bonin and Volcano Islands (Iwo Jima) (27)	KG6	Fridtjof Nansen Land (Franz Josef Land) (40)	UA1	Monaco (14)	(CZ)
Borneo, British North (28)	VS4			Mongolian Rep. (Outer) (23)	(JT)
Borneo, Netherlands (28)	PK5	Galapagos Islands (10)		Morocco, French (33)	CN
Brazil (11)	PY	Gambia (35)	ZD3	Morocco, Spanish (33)	EA9
Brunei (28)	VS5	Germany (14, 15)	DL	Mozambique (37)	CR7
Bulgaria (20)	LZ	Gibraltar (14)	ZB2		
Burma (26)	XZ	Gilbert, Ellice & Ocean Is. (31)	VR1	Nepal (22)	VU7
		Goa (Portuguese India) (22)	CR8	Netherlands (14)	PA
Cameroons, French (36)	FE	Gold Coast (and British Togoland) (35)	ZD4	Netherlands West Indies (9)	PJ
Canada (2, 3, 4, 5)	VE, VO	Greece (20)	SV	New Caledonia (32)	FK
Canal Zone (7)	KZ5	Greenland (40)	OX	New Guinea, Netherlands (28)	PK7
Canary Islands (33)	EA8	Guadeloupe (8)	FG	New Guinea, Territory of (28)	VK9
Cape Verde Islands (35)	CR4	Guantanamo Bay (8)	KG4	New Hebrides (32)	FU, YJ
Caroline Islands (27)	KC6	Guatemala (7)	TG	New Zealand (32)	ZL
Cayman Islands (8)	VP5	Guiana, British (9)	VP3	Nicaragua (7)	YN
Celebes & Molucca Is. (28)	FK6	Guiana, French, and Inini (9)	FY	Nigeria (35, 36)	ZD2
Ceylon (22)	VS7	Guiana, Netherlands (Surinam) (9)	PZ	Niue (32)	ZK2
Chagos Islands (39)	VQ8	Guinea, Portuguese (35)	CR5	Norfolk Island (32)	VK9
Channel Islands (14)	GC	Guinea, Spanish (35)		Norway (14)	LA
Chile (12)	CE			Nyasaland (37)	ZD6
China (23, 24)	(B), C	Haiti (8)	HH	Oman, Trucial (21)	MP4
Christmas Island (29)	ZC3	Hawaiian Islands (31)	KH6		
Clipperton Island (7)	FO8	Heard Island (39)	VK1	Pakistan (22)	AP
Cocos Island (7)	TI	Honduras (7)	HR	Palau (Pelew) Islands (27)	KC6
Cocos Islands (29)	ZC2	Honduras, British (7)	VP1	Palestine, Arab (20)	ZC8
Colombia (9)	HK	Hong Kong (24)	VS6	Panama (7)	HP
Comoro Islands (39)	FB8	Hungary (15)	HA	Papua Territory (28)	VK9
Cook Islands (32)	ZK1	Iceland (40)	TF	Paraguay (11)	ZP
Corsica (15)	FC	India (22)	VU	Peru (10)	OA
Costa Rica (7)	TI	Iran (21)	EP, EQ	Philippine Islands (27)	DU
Crete (20)	SV	Iraq (21)	(MD6), YI	Phoenix Is., British (31)	
		Ireland, Northern (14)	GI	Pitcairn Island (32)	VR8
		Isle of Man (14)	GD	Poland (15)	SP
		Israel (20)	4X4	Portugal (14)	CT1
		Italy (15)	I	Principe & Sao Thome Is. (36)	
				Puerto Rico (8)	KP4
		Jamaica (8)	VP5		
		Jan Mayen Island (40)		Reunion Island (39)	FR
		Japan (25)	JA	Rhodesia, Northern (36)	VQ2
		Jarvis & Palmyra Is. (31)	KP6	Rhodesia, Southern (38)	ZE
		Java (28)	PK	Rio de Oro (33)	(EA8)
		Johnston Island (31)	KJ6	Roumania (20)	YO
				Ryukyu Is. (Okinawa) (25)	KR6

St. Helena (36)	ZD7
Salvador (7)	YS
Samoa, American (32)	K56
Samoa, Western (32)	ZM
San Marino (15)	(M1)
Sarawak (28)	VS5
Sardinia (15)	IS
Saudi Arabia (Hedjaz & Nejd) (21)	HZ
Scotland (14)	GM
Seychelles (39)	VQ9
Siam (26)	HS
Sierre Leone (35)	ZD1
Sikkim (22)	AC3
Solomon Islands (28)	VR4
Somaliand, British (37)	(MD4), VQ6
Somaliand, French (37)	(MD4), FL
Somaliand, Italian (37)	(MS4, MD4)
South Georgia (13)	VP8
South Orkney Islands (13)	VP8
South Sandwich Islands (13)	VP8
South Shetland Islands (13)	VP8
Southwest Africa (38)	ZS3
Soviet Union:	
European R.S.F.S.R. (16)	UA1, 3, 4, 6
Asiatic R.S.F.S.R. (17, 18, 19)	UA9, 0
Ukraine (16)	UB5
Belorussian S.S.R. (16)	UC2
Azerbaijan (21)	UD6
Georgia (21)	UF6
Armenia (21)	UG6
Turkmen (17)	UH8
Uzbek (17)	UI8
Tadzhik (17)	UJ8
Kazakh (17)	UL7
Kirghiz (17)	UM8
Karelo-Finnish Republic (16)	UN1
Moldavia (16)	UO5
Lithuania (15)	UP2
Latvia (15)	UQ2
Estonia (15)	UR2
Spain (14)	EA
Sumatra (28)	PK4
Svalbard (Spitzbergen) (40)	(LA)
Swan Island (8)	KS4
Swaziland (38)	ZS7
Sweden (14)	SM
Switzerland (14)	HB
Syria (20)	YK
Ta'anganyika Territory (37)	VQ3
Tangier Zone (33)	EK
Tannu Tuva (23)	(TT)
Tibet (23)	AC4
Timor, Portuguese (28)	CR10
Togolau, French (35)	FD
Tokelau (Union) Islands (31)	
Tonga (Friendly) Islands (32)	VR5
Transjordan (20)	ZC1
Trieste (15)	AG2, MP2
Trinidad and Tobago (9)	VF4
Tristan da Cunha & Gough Is. (38)	ZD8
Tunisia (35)	(SV8), ET
Turkey (20)	TA
Turks & Caicos Islands (8)	VP5
Uganda (37)	VQ5
Union of South Africa (38)	ZS
United States of America (3, 4, 5, K, W)	
Uruguay (13)	CX
Vatican City State (15)	HV
Venezuela (9)	YV
Virgin Islands (8)	KV4
Wake Island (31)	KW6
Wales (14)	GW
Windward Islands (8, 9)	VP2
Wrangel Island (19)	
Yemen (21)	
Yugoslavia (15)	YU
Zanzibar (37)	VQ1

STAND OFF INSULATORS

Cheap, strong, electrically nearly perfect, convenient and easily installed one hole mounting Stand Off Insulators—or tie points can be made as follows:—

From a length of quarter inch or five-sixteenth inch polystyrene rod a section the length of the desired insulator is cut and each end is squared smooth with a file. Along the axis a hole is drilled vertically into each end of the rod and a thin self tapping steel screw one third to one half inch long is driven in.

As long as the self tapping screws are not too thick in relation to the tube diameter, the polystyrene will not break and the screw will lock rigidly. One of the screws is used to secure the rod to the chassis or panel. A solder-lug is fixed with the other to carry conductors or equipment.

When installed, this simple insulator, the construction of which is a matter of seconds, is amazingly strong and rigid.

It will be found abundantly substantial to support inductances and similar equipment in v.h.f. transmitters and it has an attractively low self capacitance at the "hot" point.

It is better to use a hand drill running slowly than any powered drill in making the holes as less heat is generated in the process and a cleaner job results.

The usual precautions must be observed in soldering to the lug to avoid overheating and distortion, but the heat conveyed into the body of the insulator by the screw will frequently tend to seal the screw into its anchorage and make an even firmer job.

—Anonymous, Canberra.

Plan your Rig for 1951 with these High Quality Components!

	PRICE (Inc. Sales Tax)
General Electric N551 Miniature BC Fitting Neon Glow Lamps, 1 watt	2/3 each
General Electric G-watt 40 Ma. Lamps. Ideal for Crystal Fusing, etc.	11d. each
Bulgin 8270 D.P.D.T. Toggle Switches	6/4 each
Bulgin 8270 P.D. D.P.D.T. with extended dollies	6/9 each
Bulgin 8265 two-way Switches (bridge for S.P.D.T.)	6/1 each
Bulgin P28/P29 two-pin Round Cable Connectors (male and female sections)	6/9 each
Bulgin TPI Test Prods with Plated Tips	7/6 each
Bulgin TTI Insulated Lining Up Tool	2/6 each
Bulgin D400 Series Panel Lamps—Red, Green, Blue, Amber	3/11 each
Bulgin D170 Series Panel Lamps—Red, Green, Blue, Amber	3/9 each
Bulgin D300 Series Panel Lamps—Red, Green, Blue, Amber (front loading)	5/9 each
Bulgin D600 Signal Lamp Lens Bushes—Red, Green, Blue, Amber	6/6 each
Bulgin 8206 two by nine-watt Wafer Switches, Contact Rating 1 Amp.	8/6 each
Bulgin E13 Hi-Isolated Switch Escutcheon ON/OFF Plates for Toggle Switches	1/- each
Bulgin P161 Two-pin Round Cord Connectors	8/5 each
Bulgin IVC-23 47,000 ohm 3 watt W.W. potentiometers insulated for 500 volts (Values from 10 ohms upwards available shortly.)	7/9 each
Ceramic Sockets for 832 Valves (Only a few now available)	15/6 each
Elec Resistors in preferred values	10d. each
Painton No. 500470 six-way Jones type Female Cable Sockets	10/9 each
Painton No. 500469 six-way Jones type Male Chassis Plugs	7/6 each
Painton No. 500475 eight-way Jones type Female Cable Sockets	12/9 each
Painton No. 500474 eight-way Jones type Male Chassis Plugs	9/3 each
B.T.H. Shaded Pole 9 watt Output Induction Motors. Ideal for driving Wire and Tape Recorders, Recording Turntables, etc.	90/- each
Belling & Lee Twin Co-ax Cable Connectors (line to chassis). L625P/S	17/8 each
Belling & Lee LS13 3 m.m. "Q-Z" Multi-Contact Pins for Plug-in Coils (fit standard Banana Socket)	1/4 each
Belling & Lee Multi-Connectors to suit I.F.F. Units. Write for details giving number of Pins and Male or Female Connection.	
Belling & Lee L1055 General Purpose Fuses, similar in construction to standard car Fuses. Available in 50, 100, 150, 250, 600 Ma.; 1, 2, 5, 10 and 15 Amp. 111d. each	
L356 Panel Fuse Holders for above. Front Loading	5/4 each
L510 Open Fuse Holders for side-chamber mounting	1/6 each
L1045/C3 Safety Fuse Holders, Panel Mounting	7/- each
L1033/C4 Twin Safety Fuse Holders, Panel Mounting	9/9 each
Belling & Lee Catalogue available on Request. Please include 2d. Postage.	
Labgear Wide-Band Couplers for 3.5, 3.4, and 28 Mc. Bands	41/- each
Belling & Lee 72 ohm Twin Flat Line, type L336	per 65 ft. coil 18/9 each
Belling & Lee 70 ohm Co-ax Cable, type L600	2/- yard
Belling & Lee 72 ohm Twin Flat Line, Co-axial Cable, type L1221	2/6 yard
Belling & Lee type L333 "T" Insulators for Centre Fed Dipoles	6/3 each
Universal Crystal Microphones—high output	97/6 each
Zepphr type 16C Velocity Microphones, 40-16,000 c.p.s., output impedance 50 ohms (or any other impedance), output level —29 dB below 1 millivolt with a sound pressure of 1 Bar into a load of 50 ohms. Beautifully finished in chrome and black with 20 ft. Twin Cable	£27 3/9 each
Telcon 300 ohm Twin Flat Line	1/- yard

COUNTRY CLIENTS PLEASE INCLUDE FREIGHT AND EXCHANGE.

WILLIAM WILLS & CO. PTY. LTD.

428 BOURKE STREET, MELBOURNE, C.I. Phone: MU 2426

Established over 80 years.

DX NOTES BY VK4QL

Each month of late I have been hoping that we had reached the stage that we would not be digging so deep into the "DX bucket" looking for something to work with ease and comfort, but November in North Queensland needed deep digging and fairly hard work, trying to read stations through the exceptionally high and continuous static on the 14 Mc. band. I have done practically nothing this month on 3.5 and 7 Mc. for the reason that static was so severe day after day. It apparently has not been isolated to this QTH, as southern stations have all complained along the same lines.

With the poor conditions on 14 Mc., one thing has been very noticeable, and that is the big increase in poor signals, as far as quality goes, emanating from VK and ZL. At one time a 29X or good phone was the rule, but now it is fast becoming the exception more than the rule to hear the real good signals. Many T5 and T7 carriers are on the band, and these are modulated with nerve shattering results to those trying to dig for the weak DX. Key clicks, chirps, parasitics, sidebands are heard from the same stations day after day, which either indicates they don't care for their fellow Hams or dishonest reports are being given. One Brisbane phone station had three S9 signs on the band here. You can imagine what it did to DX.

Somebody else has a poor sense of humor, as "v.i.o. or more correctly transmitter swishing" has been prevalent. One bloke had a T5 signal at S9, going up and down the band. These antics go on for considerable periods, and it certainly helps you to read the S4 DX, so blokes in VK, what about cleaning up the bands a bit, eh?

The strangest call heard on the band was MGBN1, and your guess at its derivation is as good as mine. A point of interest comes from KP4HU who said that ET9X will be moving round a bit, and one location will be FL8. As I haven't heard him of late he may be somewhere new now. The old story, you never know what will appear on an apparently dead band, was well borne out this month by stations such as ET6AC, OQ5BR, FQ8AE, CR4AH and M13VG being worked when things seemed hopeless, as far as 14 Mc. was concerned. Excursions to 7 Mc. produced very little except one or two weak South Africans round about 6.30 a.m.

The rarer prefixes worked or heard for the month were ZK2AA, ZK1AB, ET6AJ, KC6WB, PK1NL, VQ2AB at 3 p.m., EK1AO, HZ1KE, YJ1AA, YJ1AB, C9AA Manchuria, ZB21, OQ5BR, KB6AQ, CT3AN, UJ8KAA, FQ8AE (Box 69, Fort Lamy), CR4AH Cap Vert Sal. Is., ZD2LD, CR6AW, ZC4HX, CR5AC, M13VG, FQ8AI, KW6AO, HK4DP, 4X4RE, HP1LO, HS1VR Army Signal Corps, Bangkok, EQ3FM.

For those who are not aware, FK8AC told me the other day that FK8AD said last June. Vale FK8AD.

2ADV advises that he will be distributing and receiving QSL cards for VR1F. For those who desire to send the card to VR1F, his address is: Don Schroder, P.O. Box 15, Phoenix Group. Don will forward lists of stations worked to Mac. Heard discussion on air the other night as to whether VR1F was a different country to KB6. The DX C.C. Committee could possibly give a ruling on that to set the DX C.C. enthusiasts' minds at rest.

By the way, reverting to the VK8 business, in 1936, I had cause to operate VK8SC and gave VK2VG a VK8 QSO, so another one is chalked up.

VK8CX comes good again, and tells me he has been hearing ZS stations between 3 and 4 p.m. on 14 Mc. This used to be the time one heard them on 28 Mc. Heard AP2N at 5 p.m. V56s have been heard here as well as Js round 3 p.m. Alan added HR1AT, ZM6AK and F18GD to his score, making 127 countries. As Alan faded out, his bulletin is incomplete. He said 3YP has 207 and 3FH 187 respectively. By adding 10 new ones for the month, my total for the nine months' operation in VK4 is 129, with 69 confirmed. QSLs from VKIRD and CR10AA have been seen this month. Other QSOs of interest for the month are VP90L and KV4AA.

• The thought for the month, taken from a Swedish Amateur Radio Society pamphlet: "Amateurs in all the world, form one body emanating mutual friendship, understanding and co-operation. Let us unite even more and help to preserve world Peace."

IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS

JANUARY, 1951

The accompanying charts have been prepared by the Ionospheric Prediction Service of the Commonwealth Observatory. The first set of the series was published in the November, 1948, issue of this magazine together with an article explaining the nature of the forecasts and how to use them. Nine of the charts, prefixed by the letter "C" for Canberra, refer to forecasts for the South-Eastern Australian States. The remainder, prefixed by the letter "P" for Perth, are for Western Australia.

Canberra charts refer to following world zones:—

Zone	Region	Terminal
1	Western Europe	London
2	Mediterranean	Cairo
3	N-West America	San Francisco
3a	N-East America	New York
4	Central America	Barbados
5	South Africa	Capetown
6	Far East	Manila

The Perth charts are similar to those based on Canberra. No forecasts are given from Perth to Zones 22 and 23 for the current month, as chart P-22 would be essentially similar to chart P-21, while chart P-24 might be unreliable due to auroral activity in high northern latitudes.

USE OF CHARTS

All that is necessary in using the charts is to select a time (G.M.T.) during which a specified Amateur band frequency is below the maximum useful frequency (MUF) of the F region of the ionosphere, but above the lowest useful frequency (LUF) for the desired contact. In two cases, Zones 1 and 3a it is necessary to consult both the short-note (s.r.) chart and the following long-note (l.r.) chart.

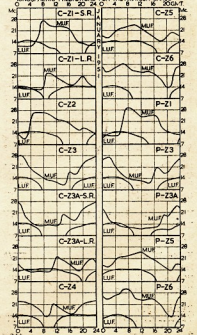
QUIZ

The Prediction Service welcomes comments on the accuracy of its predictions. In particular, answers to the following questions on the Perth-Manila circuit would be useful:—

- Were good conditions experienced on 7 Mc. for the period 1000 to 2200 hours G.M.T.?
- Was the 14 Mc. band workable around 2000 hours G.M.T.?
- Was the 28 Mc. band workable from 0600 to 0900 hours G.M.T.?

Answers to the Quiz should be sent to the W.I.A. and should, if possible, refer to consistent results obtained on the majority of days in the month.

IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS



DX C.C. LISTING

PHONE

Call	No.	Otrs.	Call	No.	Otrs.
VK3JD	1	151	VK4AP	9	114
VK3EE	10	148	VK3AWW	17	112
VK3BZ	3	141	VK4WJ	17	104
VK3FJ	4	140	VK2ADT	18	102
VK3RU	2	138	VK2AHA	15	102
VK3DD	6	126	VK4WF	16	101
VK3E	12	123	VK3DG	15	100
VK4HR	12	122	VK3JG	7	100
VK4NS	9	121	VK3JE	7	100

CW

Call	No.	Otrs.	Call	No.	Otrs.
VK3BZ	6	188	VK7LZ	17	112
VK2EO	2	162	VK3JE	21	108
VK3CN	2	159	VK4BC	13	107
VK3FJ	13	151	VK2GW	16	107
VK3EL	9	150	VK3YD	27	106
VK3QL	5	141	VK3SK	30	105
VK3YD	14	140	VK5BO	35	105
VK3KB	10	138	VK5PH	31	105
VK6SA	28	136	VK3JL	25	104
VK3YD	8	131	VK3VC	34	103
VK4RF	11	125	VK4PJ	29	102
VK6RU	18	125	VK3APA	14	101
VK3EE	12	123	VK3CX	26	101
VK3RX	22	119	VK2QA	32	101
VK3UM	7	113	VK7RK	22	100
VK4DO	26	113	VK7LZ	24	100

OPEN

Call	No.	Otrs.	Call	No.	Otrs.
VK3BZ	4	202	VK3ADT	14	113
VK3FJ	8	170	VK4BO	21	110
VK3KX	1	167	VK3ZB	34	110
VK4HR	7	167	VK3BH	41	110
VK3BZ	13	166	VK4WF	49	109
VK6W	33	161	VK2ZC	25	108
VK2DI	2	160	VK2YL	11	106
VK3JE	12	154	VK3ARM	20	106
VK3YD	10	150	VK2AM	28	105
VK4DO	15	140	VK3AWN	36	105
VK3DG	5	139	VK2VN	18	104
VK4AP	24	139	VK4UL	18	104
VK3OP	19	137	VK2HZ	17	103
VK6DD	22	136	VK7RB	30	103
VK3BZ	28	135	VK3JL	37	103
VK3AH	9	128	VK3HO	38	102
VK3EL	29	128	VK6DX	42	102
VK3BZ	13	125	VK7RK	31	102
VK4FJ	22	120	VK4TY	33	102
VK7LZ	33	116	VK2ACX	6	100
VK7LZ	33	116	VK2TG	39	100
VK3JA	43	114			

Compiled by J. K. RIDGWAY, VK3CR.

50 Mc. ACTIVITY
NEW SOUTH WALES

VICTORIA

SOUTH AUSTRALIA

WESTERN AUSTRALIA

144 **Mc. DOINGS OF THE MONTH**

NEW SOUTH WALES

50 Mc. W.A.S.

VICTORIA

— . . . —

ANSWERS, AMATEUR RADIO QUIZ
(QUESTIONS ON PAGE 8)

ANSWERS, AMATEUR RADIO QUIZ

(QUESTIONS ON PAGE

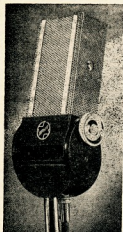
- Page 13

THE GREATEST NAME IN MICROPHONES—

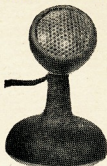
FOR THE PROFESSIONAL

FOR NATURAL REPRODUCTION

FOR THE AMATEUR



Zephyr High Fidelity Velocity Microphone for broadcast or recording. Made in all impedances. List Price: from £27/3/9.



Zephyr Moving Coil Speech Microphones are available in all impedances and are listed from £5/17/6.

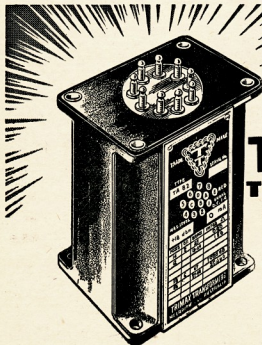
Available hitherto only to Professionals, the range of Zephyr Precision Built Microphones is now being offered for all requirements. There is a model for all occasions with suitable stand fittings.

AVAILABLE THROUGH ALL THE LEADING RADIO HOUSES

Sole Australian Agents:

R. H. CUNNINGHAM PTY. LTD.

62 STANHOPE STREET, MALVERN, VICTORIA. Phone: UY 6274.



TRIMAX TRANSFORMERS

Every Transformer looks to be simply coils of wire on a core, but the beauty of Trimax Transformers is more than skin deep! Long experience and high standards of technical ability ensure that the unseen parts of your Trimax Transformers will prove their reliability in every test.

TRIMAX TRANSFORMERS

Cliff and Bunting Pty. Ltd.

CHARLES STREET, NORTH COBURG, MELB., VIC.

Q'LAND:

Chandlers Pty. Ltd.

N.S.W.:

Radio Equipment Pty. Ltd.

John Martin Pty. Ltd.

TAS:

W. G. Genders Pty. Ltd.

SOUTH AUS:

A. G. Healing Ltd.

Gerard and Goodman Pty. Ltd.

Radio Elec. Wholesalers Ltd.

WEST AUS:

Nicholson Ltd.

Atkins (W.A.) Ltd.

Carlyle & Co. Ltd.

FEDERAL, CSL, and DIVISIONAL NOTES

Federal President: W. R. GRONOW (VK3WG); Federal Secretary: G. M. HULL (VK3ZS), Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

President.—J. Corbin, VK2YC.
Secretary.—David H. Duff (VK2EO), Box 1754
G.P.O., Sydney.

Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.

Divisional Sub-Editor.—A. C. Pearce, VK2AHB, 181A Balmain Rd., Leichhardt, N.S.W.

Zone Correspondents.—Nth. Coast & Tablelands: J. M. Reticall, VK2XO, Raleigh, Newcastle; H. W. Wale, VK2BA, Vale St., Birmingham Gardens, Newcastle; Coalfields and Lakes: H. Hawkins, VK2YL, 37 Comfort Ave., Cessnock; Western: W. H. Scott, VK3WH, Cumbyhwa, Forbes; South Coast and Southern: R. H. Hayner, VK2DO, 42 Pettit St., Yass; Western Suburbs: A. C. Pearce, VK2AHB, 181A Balmain Rd., Leichhardt, Eastern Suburbs: D. B. Knock, VK2NO, 43 Yankoo Avenue, Waverley; North Sydney: L. D. Cuffe, VK2AM, 179 Military Rd., Mosman; George: G. K. Ackerman, VK2ALD, 33 Park Rd., Carlton; South Sydney: V. H. Wilson, VK2VW, Cnr. Wilson St. and Macleay Pde., Maroubra.

VICTORIA

President.—G. S. C. Scammens, VK3GS.
Secretary.—C. Dyer (VK3DY), 19 Collington Ave., Brighton (CA 8226).

Administrative Secretary.—Mrs. S. May, Law Court Chambers, 121 Queen St., Melbourne.

Meeting Night.—First Wednesday of each month at the Radio School, Melbourne Technical College.

Zone Correspondents.—Western: C. C. Waring, VK3YV, 15 Skene St., St. Albans, South Western: R. Burke, VK3AKI, Killigarth, Western; North Eastern: T. K. Tennant, 18 Harold St., Shepparton; Far North Western: M. Folie, 179 Lennon Ave., Mildura; Eastern: G. K. Ackerman, VK2ALD, 33 Park Rd., Carlton; North Western: C. Case, VK3ACR, Cumming Ave., Birchb.

FEDERAL

SPECIAL AMATEUR PROGRAMMES

The Belgian National Broadcasting Service have announced the transmission from their Leopoldville station (Belgum Congo) call letters OTG, of regular twenty minute programmes for Radio Amateurs in collaboration with Amateur Clubs. The station, rated at 30 kw., transmits on 9767 Kc. at the following times:—

1810 G.M.T. in Dutch.
1910 G.M.T. in English.
2010 G.M.T. in French.

Each programme is composed of news about amateur transmitting and reception, interviews with Belgian and foreign Radio Amateurs, DX news, a letter box and a review of Amateur radio periodicals. Any interested members are asked to forward a signal report, together with their QSL card to—Belgian Overseas Service, OTG, Programme DX, 18 Place E. Flagey, Brussels (Belgium).

ADDITIONS, ALTERATIONS, AND DELETIONS TO AMATEUR CALL SIGNS—NOVEMBER, 1950

Additions—

VK21Q—A. J. E. Robertson, 6 Leachlan Flats, 108 Brook St., Coogee (changed from VK2QZ).
2QZ—Dr. R. H. Black, 36 College St., Sydney (changed from VK2AQZ).

2AEO—R. H. Clark, 18 French Ave., Bankstown.
2AFY—J. MacPhee, 23 Scholey St., Mayfield, Newcastle.

2AQR—R. W. Root, 26 Weir St., Warragamba.
2ATY—T. W. Thatcher, 51 Stanmore Rd., Stanmore.

VK3AY—R. R. C. Davies, 26 Sutherland Rd., Collingwood.

3ZZ—W. L. Stevens, 18 Wimala Rd., Balwyn.
3ZJ—J. Duffy, 706 Main St., Ballarat.

3ALP—J. R. Catkins, 14 Francis St., Werribee.

3AND—N. T. Buchanan, 230 Ascot Vale Rd., Ascot Vale.

VK4KM—J. H. Mack, Willis Island.

4SA—J. Armstrong, Hawthorne St., Enoggera, Brisbane.

VK5AH—E. L. Williamson, 24 Salisbury Terrace, Sutherland.

5TF—H. P. Fuller, Night Cliff, Darwin.

5WP—A. H. Watts, 15 Robert St., North Daley.

VK6CS—J. Speer, Lethbridge, 33 Ladd, N.G.
VK7RF—R. J. Frost, Macquarie Island.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI—Sundays, 1100 hours EST, 7195 Kc. and 2000 hours EST 50 and 144 Mc. No frequency checks available from VK2WI.
Intra-State working frequency, 7175 Kc.

VK3WI—Sundays, 1130 hours EST, simultaneously on 3500 and 7195 Kc. and re-broadcast on 50 and 144 Mc. bands. Intra-State working frequency 7185 Kc. Individual frequency checks. Amateur Stations given when VK3WI is on the air.

VK4WI—Sundays, 0600 hours E.S.T. simultaneously on 3750 Kc., 7195 Kc., 14345 Kc., 52.4 Mc. and 144.138 Mc. Frequency checks are given two nights weekly, and the times are announced during Sunday broadcasts. 7065 Kc. channel is used from 1000 to 1030 hours each Sunday as VK4 query service to VK4WI.

VK5WI—Sundays, 1000 hours SAST, on 7195 Kc. Frequency checks are given by VK5WD by arrangement only on the 7 and 14 Mc. bands.

VK6WI—Sundays, 0930 hours WAST, on 7195 Kc. No frequency checks available.

VK7WI—Sundays at 1000 hours E.S.T. on 7195 Kc. No frequency checks are available.

SILENT KEY

It is with deep regret that we record the passing of:—

VK4ER—Eric Rielly, in November, 1950.

VK2ZN—Bill Cottrell, 1st December, 1950.

Alterations—

VK3AL—29 Currawang St., Blackburn.

2BO—110 Auburn Street, Goulburn.

2RZ—Sungrave Road, Walsend.

2MO—81 Kenbee Avenue, Kahlbath.

2ON—111 Bann Street, Dapto.

2QI—S.S. "Bilkurra," 25 Castle St., Randwick, Newcastle.

2UG—J. "Acropolis Flats," Parkway Avenue, Newcastle.

2YZ—226 Franklin Street, Matraville.

2ZB—38 Jume Parade, Lakemba.

3ZH—107 Archer Street, Chateauwood.

2AQ—Seven Acres, Princess Highway, Heathcote, Sydney.

2AQP—120 Headland Road, Dee Why.

2AN—No. 18, 43rd Street, Warragamba Dam.

2AWY—65 Dalton Street, Orange.

VK3AN—33 Field Avenue, Edithvale.

8FQ—29 Inkerman Street, Maryborough.

W.I.A. ACTIVITIES CALENDAR

Jan. 19: Convention Motions due in to Federal Executive.

Jan. 27: W.I.A. Nat. Field Day Contest.

Jan. 27-28: South African International DX Contest, 1951.

Jan. 31: Membership Roll of each Division due with F.E.

Feb. 3-4: B.E.R.U. Contest—Phone.

Feb. 24-25: B.E.R.U. Contest—C.W.

Feb. 28: Convention Per-Capita due with F.E.; and of Fiscal Year of Divisions.

March 3-4: B.E.R.U. Contest—C.W.

QUEENSLAND

President.—J. F. Pickles, VK4FP.
Secretary.—W. L. Stevens, VK4TB, Box 6282, G.P.O., Brisbane.

Meeting Night.—Third Friday in each month at I.R.E. Rooms, Wickham St., Valley.

Divisional Sub-Editor.—Clive J. Cooke, VK4CC, Kuram Street, Chormside, Brisbane.

SOUTH AUSTRALIA

President.—E. A. Barbler, VK6MD.
Secretary.—D. J. Bowen, VK3XU, Box 1234K, G.P.O., Adelaide.

Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide.

Divisional Sub-Editor.—W. Parsons, VK6PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

President.—R. W. S. Hugo, VK6KW.
Secretary.—W. E. Coxon, VK6AG, 1 Howard St., Perth.

Meeting Place.—Pabury House, Cnr. St. George's Ter. and King St., Perth.

Meeting Night.—Third Tuesday of each month.

Divisional Sub-Editor.—Alec A. Smith, VK6AS, 75 Weston St., Carlisle, Western Australia.

TASMANIA

President.—J. Brown, VK7BJ.
Secretary.—R. D. O'May, VK7OM, Box 371B, G.P.O., Hobart.

Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.

Divisional Sub-Editor.—S. Exell (VK7SJ), 77 Melle Street, Hobart, Tasmania.

Northern Zone Correspondent.—R. H. Kilby, VK7RE, 5 Galvin Street, Launceston.

31Q—Carisbrook, c/o, 3CV.

3PZ—12 Macdonald Street, Colac.

3MF—1019 1/2 Ritz Street, Ballarat.

3M1—42 Capon Street, Oakleigh.

3PZ—80 Munro Street, Coburg.

3QK—11 McIntyre Street, Hamilton.

3ZB—Furnley Avenue, Macleod.

3ABP—R.A.A.F. Station, East Sale.

3AEM—7 Plumbridge St., White Hills, Bendigo.

3AEG—115 Lava Street, Warrnambool.

3ALB—Springvale Road, Glen Waverley.

3ALV—33 Howitt Road, Camfield North.

VK2PD—Agnes Street, Newtown, Rading.

3DE—7 Godfrey Terrace, Lea Brook.

VK6GIL—440 Cairns Highway, Melville.

VK7BE—266 Park Street, Hobart.

7CK—Dairy Plains Estate, Deloraine.

7OK—Cr. Brooke & Tarleton Sts., E. Devonport.

Deletions—

VK2AQ—Cancelled, now operating under VK3AAQ.

2IB—Cancelled.

2QZ—Cancelled, now operating under VK2IQ.

3ANB—Cancelled, now operating under VK3AOD.

2QAQZ—Cancelled, now operating under VK2QZ.

VK3AQZ—Cancelled.

VK4B—Cancelled.

4RQ—Cancelled, now operating under VK2AQR.

5TB—Cancelled, now operating under VK3ZY.

5LJ—Cancelled, now operating under VK3AY.

5TK—Cancelled.

VK6PD—Cancelled.

VK9PT—Cancelled.

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

John of HLIZZ admitted deriving intense interest from listening to the short wave broadcast of the first test match from Brisbane. John would not commit himself as to whether he had a previous knowledge of the game or to which team he owes his allegiance.

According to a superscription from KHOC addressed to VK3A, the latter is back in Australia. QTH please?

A choice one worked by VK3LJ recently is EAOZ with H. Angel G. Mergallo, Box 195, Santa Isabel, Spanish Guinea. Angel is keen to work more VK stations and is on 14800 Kc. with phone or c.w. daily. Time is not stated however. He QSLs.

Amateur Radio, January, 1951

EASTERN ZONE CONVENTION

The fourth post-war Convention of the zone was held at Sale on 25th and 26th November and was the most successful yet. It was a great success and surpassed all previous efforts, especially regarding the number of licensed Hams in attendance. The Melbourne visitors were VKs 3GS, 3XD, 3DY, 3WQ, 3AWC, Len Jackson, Jack Gordon and SFO. The zone was represented by 3VG, 3BB, 3ALA, 3IO, 3AJA, 3QZ, 3HK, 3VL, 3US, 3PR, 3SE, 3SS, 3TH, 3DI, 3RH, 3ABP, 3AFG, 3ADA, 3ADC, 3ANC, and 3AHK. Several Associates from Bairnsdale and the R.A.A.F. were present and if I have left out any call signs, please excuse.

The dinner was presided over by 3SS, who was oscillating very well on pink lolly water. Until the speeches started, we didn't know how good the Eastern Zone really is, but judging by the nice things the visitors said, we are extra super good. The toast of the Eastern Zone was proposed by 3WQ and though some people suggested that he was crawling to us, I prefer to say that he'll get on!

COALFIELDS AND LAKES

2AUNT is going QRP on 144 Mc. and is heard OK in Coosmoock and has been working Interstate on 50 Mc. for some time. 2VJ also has been working on 144 and 50 Mc., working 50 Mc. mostly and getting his share of ZLs. 2TY on 50 quite a bit these days. 2KZ still planning for the re-building of the station in the v.h.f.s. at the moment and using a converter on 50; MA should be an authority on xtal mixes judging from the line-up some 20 years recent. 2KZ having trouble with his 50 Mc. converter, mainly because of the lack of a nice beam going. 2GA and 2KR are both on 6, but not heard well at this QTH. 2EP showed up on 50 Mc. and has been heard on 144 Mc. 2DXZ getting plenty of his share of the 50 Mc. DX, ZLs and Interstate no trouble, using a four element beam this season; Jack quite active on 50 Mc. and has been heard on 144 and getting into Newcastle and Sydney very well.

Our new President is 3TH, Vice-President 3DI and 3QZ is still Secretary-Treasurer. Notes correspondents are 3AHK, with 3SS and 3VL as assistants. General business came next and the decided to hold a field conference at which place the 6 meter wallahs very much. 3WQ dazzled us with science in the matter of disposals, in which there is still great interest. A motion by 3VL, that the 6 meter address of the Eastern Zone, should be representative of the 6 & 2.4 meter policies of the band was carried. If we don't use the band, we could easily lose it! The time and place of our next Convention was left to be fixed up later, so that will be a subject for the Sunday night hook-up later. About 1:00 p.m. the regular re-appearing and supper was served, the usual earbush session began and the kawe quit about midnight.

WESTERN ZONE

Zone officer Hugh Stitt, VK2WH, is excited from contributing notes this month as having been mentioned in his letter to the *QST*. He said, it was his belief, celebrating in Sydney. Journeyed up to Way Way to see the gang at the Field Day. 2EX did a repair job on 2LY's antenna, who was on his way to the 2000 ft. tower. The 2000 ft. tower was damaged. Dobbo is well ahead in prospective Ham—one has just passed the A.O.C.P. and two are very close—2AMP and 2XP did the tutoring—2AY, 2WY, 2XZ, 2YB, 2YD, 2YF, 2YH, 2YJ, 2YK, 2YL, 2YM, 2YN, 2YO, 2YP, 2YQ, 2YR, 2YS, 2YT, 2YU, 2YV, 2YW, 2YX, 2YY, 2YZ, 2ZB, 2ZC, 2ZD, 2ZE, 2ZF, 2ZG, 2ZH, 2ZI, 2ZJ, 2ZK, 2ZL, 2ZM, 2ZN, 2ZO, 2ZP, 2ZQ, 2ZR, 2ZS, 2ZT, 2ZU, 2ZV, 2ZW, 2ZX, 2ZY, 2ZZ, 2AA, 2AB, 2AC, 2AD, 2AE, 2AF, 2AG, 2AH, 2AI, 2AJ, 2AK, 2AL, 2AM, 2AN, 2AO, 2AP, 2AQ, 2AR, 2AS, 2AT, 2AU, 2AV, 2AW, 2AX, 2AY, 2AZ, 2BA, 2BB, 2BC, 2BD, 2BE, 2BF, 2BG, 2BH, 2BI, 2BJ, 2BK, 2BL, 2BM, 2BN, 2BO, 2BP, 2BQ, 2BR, 2BS, 2BT, 2BU, 2BV, 2BW, 2BX, 2BY, 2BZ, 2CA, 2CB, 2CC, 2CD, 2CE, 2CF, 2CG, 2CH, 2CI, 2CJ, 2CK, 2CL, 2CM, 2CN, 2CO, 2CP, 2CQ, 2CR, 2CS, 2CT, 2CU, 2CV, 2CW, 2CX, 2CY, 2CZ, 2DA, 2DB, 2DC, 2DD, 2DE, 2DF, 2DG, 2DH, 2DI, 2DJ, 2DK, 2DL, 2DM, 2DN, 2DO, 2DP, 2DQ, 2DR, 2DS, 2DT, 2DU, 2DV, 2DW, 2DX, 2DY, 2DZ, 2EA, 2EB, 2EC, 2ED, 2EE, 2EF, 2EG, 2EH, 2EI, 2EJ, 2EK, 2EL, 2EM, 2EN, 2EO, 2EP, 2EQ, 2ER, 2ES, 2ET, 2EU, 2EV, 2EW, 2EX, 2EY, 2EZ, 2FA, 2FB, 2FC, 2FD, 2FE, 2FF, 2FG, 2FH, 2FI, 2FJ, 2FK, 2FL, 2FM, 2FN, 2FO, 2FP, 2FQ, 2FR, 2FS, 2FT, 2FU, 2FV, 2FW, 2FX, 2FY, 2FZ, 2GA, 2GB, 2GC, 2GD, 2GE, 2GF, 2GG, 2GH, 2GI, 2GJ, 2GK, 2GL, 2GM, 2GN, 2GO, 2GP, 2GQ, 2GR, 2GS, 2GT, 2GU, 2GV, 2GW, 2GX, 2GY, 2GZ, 2HA, 2HB, 2HC, 2HD, 2HE, 2HF, 2HG, 2HH, 2HI, 2HJ, 2HK, 2HL, 2HM, 2HN, 2HO, 2HP, 2HQ, 2HR, 2HS, 2HT, 2HU, 2HV, 2HW, 2HX, 2HY, 2HZ, 2IA, 2IB, 2IC, 2ID, 2IE, 2IF, 2IG, 2IH, 2II, 2IJ, 2IK, 2IL, 2IM, 2IN, 2IO, 2IP, 2IQ, 2IR, 2IS, 2IT, 2IU, 2IV, 2IW, 2IX, 2IY, 2IZ, 2JA, 2JB, 2JC, 2JD, 2JE, 2JF, 2JG, 2JH, 2JI, 2JJ, 2JK, 2JL, 2JM, 2JN, 2JO, 2JP, 2JQ, 2JR, 2JS, 2JT, 2JU, 2JV, 2JW, 2JX, 2JY, 2JZ, 2KA, 2KB, 2KC, 2KD, 2KE, 2KF, 2KG, 2KH, 2KI, 2KJ, 2KK, 2KL, 2KM, 2KN, 2KO, 2KP, 2KQ, 2KR, 2KS, 2KT, 2KU, 2KV, 2KW, 2KX, 2KY, 2KZ, 2LA, 2LB, 2LC, 2LD, 2LE, 2LF, 2LG, 2LH, 2LI, 2LJ, 2LK, 2LL, 2LM, 2LN, 2LO, 2LP, 2LQ, 2LR, 2LS, 2LT, 2LU, 2LV, 2LW, 2LX, 2LY, 2LZ, 2MA, 2MB, 2MC, 2MD, 2ME, 2MF, 2MG, 2MH, 2MI, 2MJ, 2MK, 2ML, 2MM, 2MN, 2MO, 2MP, 2MQ, 2MR, 2MS, 2MT, 2MU, 2MV, 2MW, 2MX, 2MY, 2MZ, 2NA, 2NB, 2NC, 2ND, 2NE, 2NF, 2NG, 2NH, 2NI, 2NJ, 2NK, 2NL, 2NM, 2NN, 2NO, 2NP, 2NQ, 2NR, 2NS, 2NT, 2NU, 2NV, 2NW, 2NX, 2NY, 2NZ, 2OA, 2OB, 2OC, 2OD, 2OE, 2OF, 2OG, 2OH, 2OI, 2OJ, 2OK, 2OL, 2OM, 2ON, 2OO, 2OP, 2OQ, 2OR, 2OS, 2OT, 2OU, 2OV, 2OW, 2OX, 2OY, 2OZ, 2PA, 2PB, 2PC, 2PD, 2PE, 2PF, 2PG, 2PH, 2PI, 2PJ, 2PK, 2PL, 2PM, 2PN, 2PO, 2PP, 2PQ, 2PR, 2PS, 2PT, 2PU, 2PV, 2PW, 2PX, 2PY, 2PZ, 2QA, 2QB, 2QC, 2QD, 2QE, 2QF, 2QG, 2QH, 2QI, 2QJ, 2QK, 2QL, 2QM, 2QN, 2QO, 2QP, 2QQ, 2QR, 2QS, 2QT, 2QU, 2QV, 2QW, 2QX, 2QY, 2QZ, 2RA, 2RB, 2RC, 2RD, 2RE, 2RF, 2RG, 2RH, 2RI, 2RJ, 2RK, 2RL, 2RM, 2RN, 2RO, 2RP, 2RQ, 2RR, 2RS, 2RT, 2RU, 2RV, 2RW, 2RX, 2RY, 2RZ, 2SA, 2SB, 2SC, 2SD, 2SE, 2SF, 2SG, 2SH, 2SI, 2SJ, 2SK, 2SL, 2SM, 2SN, 2SO, 2SP, 2SQ, 2SR, 2SS, 2ST, 2SU, 2SV, 2SW, 2SX, 2SY, 2SZ, 2TA, 2TB, 2TC, 2TD, 2TE, 2TF, 2TG, 2TH, 2TI, 2TJ, 2TK, 2TL, 2TM, 2TN, 2TO, 2TP, 2TQ, 2TR, 2TS, 2TT, 2TU, 2TV, 2TW, 2TX, 2TY, 2TZ, 2UA, 2UB, 2UC, 2UD, 2UE, 2UF, 2UG, 2UH, 2UI, 2UJ, 2UK, 2UL, 2UM, 2UN, 2UO, 2UP, 2UQ, 2UR, 2US, 2UT, 2UU, 2UV, 2UW, 2UX, 2UY, 2UZ, 2VA, 2VB, 2VC, 2VD, 2VE, 2VF, 2VG, 2VH, 2VI, 2VJ, 2VK, 2VL, 2VM, 2VN, 2VO, 2VP, 2VQ, 2VR, 2VS, 2VT, 2VU, 2VV, 2VW, 2VX, 2VY, 2VZ, 2WA, 2WB, 2WC, 2WD, 2WE, 2WF, 2WG, 2WH, 2WI, 2WJ, 2WK, 2WL, 2WM, 2WN, 2WO, 2WP, 2WQ, 2WR, 2WS, 2WT, 2WU, 2WV, 2WW, 2WX, 2WY, 2WZ, 2XA, 2XB, 2XC, 2XD, 2XE, 2XF, 2XG, 2XH, 2XI, 2XJ, 2XK, 2XL, 2XM, 2XN, 2XO, 2XP, 2XQ, 2XR, 2XS, 2XT, 2XU, 2XV, 2XW, 2XX, 2XY, 2XZ, 2YA, 2YB, 2YC, 2YD, 2YE, 2YF, 2YG, 2YH, 2YI, 2YJ, 2YK, 2YL, 2YM, 2YN, 2YO, 2YP, 2YQ, 2YR, 2YS, 2YT, 2YU, 2YV, 2YW, 2YX, 2YY, 2YZ, 2ZA, 2ZB, 2ZC, 2ZD, 2ZE, 2ZF, 2ZG, 2ZH, 2ZI, 2ZJ, 2ZK, 2ZL, 2ZM, 2ZN, 2ZO, 2ZP, 2ZQ, 2ZR, 2ZS, 2ZT, 2ZU, 2ZV, 2ZW, 2ZX, 2ZY, 2ZZ, 2AA, 2AB, 2AC, 2AD, 2AE, 2AF, 2AG, 2AH, 2AI, 2AJ, 2AK, 2AL, 2AM, 2AN, 2AO, 2AP, 2AQ, 2AR, 2AS, 2AT, 2AU, 2AV, 2AW, 2AX, 2AY, 2AZ, 2BA, 2BB, 2BC, 2BD, 2BE, 2BF, 2BG, 2BH, 2BI, 2BJ, 2BK, 2BL, 2BM, 2BN, 2BO, 2BP, 2BQ, 2BR, 2BS, 2BT, 2BU, 2BV, 2BW, 2BX, 2BY, 2BZ, 2CA, 2CB, 2CC, 2CD, 2CE, 2CF, 2CG, 2CH, 2CI, 2CJ, 2CK, 2CL, 2CM, 2CN, 2CO, 2CP, 2CQ, 2CR, 2CS, 2CT, 2CU, 2CV, 2CW, 2CX, 2CY, 2CZ, 2DA, 2DB, 2DC, 2DD, 2DE, 2DF, 2DG, 2DH, 2DI, 2DJ, 2DK, 2DL, 2DM, 2DN, 2DO, 2DP, 2DQ, 2DR, 2DS, 2DT, 2DU, 2DV, 2DW, 2DX, 2DY, 2DZ, 2EA, 2EB, 2EC, 2ED, 2EE, 2EF, 2EG, 2EH, 2EI, 2EJ, 2EK, 2EL, 2EM, 2EN, 2EO, 2EP, 2EQ, 2ER, 2ES, 2ET, 2EU, 2EV, 2EW, 2EX, 2EY, 2EZ, 2FA, 2FB, 2FC, 2FD, 2FE, 2FF, 2FG, 2FH, 2FI, 2FJ, 2FK, 2FL, 2FM, 2FN, 2FO, 2FP, 2FQ, 2FR, 2FS, 2FT, 2FU, 2FV, 2FW, 2FX, 2FY, 2FZ, 2GA, 2GB, 2GC, 2GD, 2GE, 2GF, 2GG, 2GH, 2GI, 2GJ, 2GK, 2GL, 2GM, 2GN, 2GO, 2GP, 2GQ, 2GR, 2GS, 2GT, 2GU, 2GV, 2GW, 2GX, 2GY, 2GZ, 2HA, 2HB, 2HC, 2HD, 2HE, 2HF, 2HG, 2HH, 2HI, 2HJ, 2HK, 2HL, 2HM, 2HN, 2HO, 2HP, 2HQ, 2HR, 2HS, 2HT, 2HU, 2HV, 2HW, 2HX, 2HY, 2HZ, 2IA, 2IB, 2IC, 2ID, 2IE, 2IF, 2IG, 2IH, 2II, 2IJ, 2IK, 2IL, 2IM, 2

After that we visited the local commercial station studio. We found our way into the "auditorium," and SWQ informed us that the world is derived from "audio." To hear and "Taurus," he believed, is to conduct. In this instance, the "type" wandered in, switched on a monitor or something and wandered out again, leaving us listening to Taurus being broadcast. No one else came near us, so after goggling at the announcer through the window, we also trooped out again, being little more than "type" in the "auditorium" of some local stations. Evidently "society week" was over!

Stop Press—The Western Zone is very pleased to welcome it's first YL operator—VK3AWH, of Werimoo. Give her a call chaps.

EASTERN ZONE CONVENTION

The fourth post-war Convention of the zone was held at Sale on 25th and 26th November and was the most successful yet. It was a great success and surpassed all previous efforts, especially regarding the number of licensed Hams in attendance. The Melbourne visitors were VKs 3GS, 3XD, 3DY, 3WQ, 3AWC, Len Jackson, Jack Gordon and SFO. The zone was represented by 3VG, 3BB, 3ALA, 3IO, 3AJA, 3QZ, 3HK, 3VL, 3US, 3PR, 3SE, 3SS, 3TH, 3DI, 3RH, 3ABP, 3AFG, 3ADA, 3ADC, 3ANC, and 3AHK. Several Associates from Bairnsdale and the R.A.A.F. were present and if I have left out any call signs, please excuse.

The dinner was presided over by 3SS, who was oscillating very well on pink lolly water. Until the speeches started, we didn't know how good the Eastern Zone really is, but judging by the nice things the visitors said, we are extra super good. The toast of the Eastern Zone was proposed by 3WQ and though some people suggested that he was crawling to us, I prefer to say that he'll get on!

A new Ham activity as far as the zone is concerned is the granting to 3TA, of Horsham, to play back recordings of Amateur transmissions if requested. Byron mentioned this during the last zone hook-up, but he must be requested to do so. Byron is also interested in xtal controlled v.h.f. converters so maybe he might be after those GAGS etc that are waiting for the maker of the first Melbourne-Central Western Zone 144 Mc. two-way contact.

3FD was paid a visit and I am now happy to inform the zone that Andy is over his charging battery worries for the time being anyway, being now equipped with a 32 volt lighting plant. Also seen was a magnificent lightning arrester for his aerial. Should have it patented Andy. Wish to welcome Andy's sister home after a sojourn of 12 months in hospital. The zone wishes you a speedy recovery and hopes to hear your voice modulating

Our new President is 3TH, Vice-President 3DI and 3QZ is still Secretary-Treasurer. Notes correspondents are 3AHK, with 3SS and 3VL as assistants. General business came next and the decided to hold a field conference at which place the 6 meter wallahs very much. 3WQ dazzled us with science in the matter of disposals, in which there is still great interest. A motion by 3VL, that the 6 meter address of the Eastern Zone, should be representative of the 6 & 2.4 meter policies of the band was carried. If we don't use the band, we could easily lose it! The time and place of our next Convention was left to be fixed up later, so that will be a subject for the Sunday night hook-up later. About 1:00 p.m. the regular re-appearing and supper was served, the usual earbush session began and the kawe quit about midnight.

We planned to visit the East Sale Aerodrome on the Sunday morning, but unfortunately the trip had to be cancelled so all hands adjourned to the 3SS shack for the 3WI broadcast.

After that we visited the local commercial station studio. We found our way into the "auditorium," and SWQ informed us that the world is derived from "audio." To hear and "Taurus," he believed, is to conduct. In this instance, the "type" wandered in, switched on a monitor or something and wandered out again, leaving us listening to Taurus being broadcast. No one else came near us, so after goggling at the announcer through the window, we also trooped out again, being little more than "type" in the "auditorium" of some local stations. Evidently "society week" was over!

Next stop was A.B.C. regional station 3GI, where we were welcomed by DAV and BEN who got our

The 508 foot tower aroused great interest and 3DI wanted someone to climb it with him, not, he said, that he was nervous, he just wanted to see what it felt like to go up there. After a careful of the works, we returned to the hall where we cleaned up the remaining cake and the party finally concluded about 1700 hours. The 6 metre blimp, a B-1K, #93, was towed by the tugboat Morris Minors filled with gear and Keith had a 3 element beam hung on his jalousy! The bug bites pretty hard, must look into it and see what I can do.

GEELONG RADIO CLUB CONDUCTS HUNT FOR
HIDDEN TRANSMITTER

CENTRAL WESTERN ZONE

Amateur transmitters have often been used in dire emergencies to help out. This time they were called upon to supply a supplementary telephone circuit to cope with an overload. Such was the job ably carried out by 3TA Hoenham in conjunction with 88 and 8APN in Weymouth on consideration of the Wimborne Hospital Board appeal. The frequency used was 5120 Kc. on the recommendation of the C.S.R. and it worked out fine with 88 sign and the boys thought the band an excellent one. They were doing a job for the hospital and were not getting 3TA on to 5120 Kc. via the telephone.

3DIP is now deeply immersed in the mysteries of the construction of a xtal filter a.s.a.c. transmitter using xtal. We are all looking forward to hearing Jim's results in the near future.



- ★ The Ham specially catered for.
- ★ Quality Cards at economical prices.
- ★ Prompt Service.
- ★ One, two or three colours if required.
- ★ Interstate orders handled.

Dee Why Printing Works

67 HOWARD AVENUE, DEE WHY, SYDNEY.

Telephone: XW 8367.

Proprietor: GEOFFREY BOWER

QSL CARDS

The DEE WHY PRINTING WORKS is making available to the Amateur Experimenter a Special QSL Card Printing Service. Knowing the requirements of Hams, we are confident the service offered will be unsurpassed in Australia.

Cards can be printed to your own specifications, and if illustrations or blocks are necessary, our Art Department can produce these for you.



Setting a New Standard in Communication Receivers—

The "Commander" Double Superhet.

Free Data Sheets on Request

Interstate Representatives: West. Aust.—Messrs. Atkins (W.A.) Ltd., 894 Hay St., Perth. Queensland—Messrs. A. E. Harrold, 123-5 Charlotte St., Brisbane. In other States direct your inquiries to firms handling Bright Star Crystals.



Valves, new, boxed, RCA 834s, £1/8/- each.

6C4s, 12/- each.

Limited number of the following Taylor Tubes: TZ20s, £2/10/- each; TB35s, £6/10/- each.

Transmitters altered for Bush Fire and Fishing Boat Work.

CRYSTALS, as illustrated, 40 or 80 mx., AT or BT cut. Accuracy 0.02% of your specified frequency, £2/12/6 each.

20 metre Zero Drift, £5 each.

Large, unmounted, 40 or 80 metre, £2 each.

Special and Commercial Crystals—Prices on application. Crystals re-ground, £1 each.

BRIGHT STAR CRYSTALS may be obtained from the following Interstate firms: Messrs. A. E. Harrold, 123 Charlotte St., Brisbane; A. G. Healing Ltd., 151 Pirie St., Adelaide; Atkins (W.A.) Ltd., 894 Hay St., Perth; Lawrence & Hanson Electrical Pty. Ltd., 120 Collins St., Hobart; Collins Radio, 409 Lonsdale St., Melbourne; Prices Radio, 5-6 Angel Place, Sydney.

A.W.A. Split Stator Transmitting Condensers, high voltage, £2/15/- each.

Screw-type Neutralising Condensers (National type), suits all triode tubes, Polystyrene insulation, 19/6 ea.

Prompt delivery on all Country and Interstate Orders.

Satisfaction Guaranteed.

BRIGHT STAR RADIO

1839 LOWER MALVERN ROAD, GLEN IRIS, VIC. Phone: UL 5510.

**ELECTRONIC
A & R
EQUIPMENT**

A & R Transformers and Reactors

**ELECTRONIC
A & R
EQUIPMENT**

- Since the acquisition of new premises early last year the productivity of our factory is steadily increasing and the requirements of more and more Hams can now be met. Arrangements are being made to ensure that A. & R. Products will be readily obtainable in all capital cities. The increased output of our factory has been coupled with the consistent high quality of all A. & R. Products.
- Whatever the requirements may be—Power Transformers, Chokes, Audio Transformers, or Modulation Equipment—a large range of these items are being manufactured to meet the demands of the discriminating Ham who wants the best possible results from his rig. A. & R. Equipment has been developed with that end in view, to produce high quality products at competitive prices. When purchasing Transformers, think of the best value and insist on A. & R.

REMEMBER . . . GOOD TRANSFORMERS MAKE GOOD EQUIPMENT

A. & R. Products available from—**Melbourne:** Wm. Willis & Company, J. H. Magrath & Company, Homecrafts Pty. Ltd.; **Adelaide:** Gerard & Goodman Ltd.; **Perth:** A. J. Wyle Pty. Ltd.; **Hobart:** A. H. Gibson Electrical (Tas.) Pty. Ltd.

A. & R. Electronic Equipment Co. Pty. Ltd.

378 ST. KILDA ROAD, MELBOURNE, S.C.1

Phones: MX 1159, MX 1150

McGILL'S (Est. 1860)

OVERSEAS AND LOCAL POPULAR MAGAZINES

OBTAINABLE ON SUBSCRIPTION

AMERICAN . . .

Audio Engineering, £1/16/-; CQ, £1/16/-; Communications (now Television Engineering), £2/2/6; Electronics, £10/-/-; Popular Science, £1/16/-; Popular Mechanics, £2/0/9; QST, £2/9/6; Radio News, £2/5/9; Radio Electronics, £2/2/3; Science Digest, £1/18/6; Science and Mechanics, £1/13/-; U.S. Camera, £1/14/3.

ENGLISH and AUSTRALIAN . . .

Australian Radio World, 16/-; Amateur Radio, 9/-; Electronic Engineering, £1/12/6; Radio and Hobbies, 12/-; Shortwave Magazine, £1/7/6; Wireless World, £1/14/-; Wireless Engineer, £2.

LARGE RANGE OF RADIO BOOKS, STATIONERY AND NOVELS ON DISPLAY

Mail Orders by Return Post.

McGill's Authorised Newsagency

183-185 ELIZABETH STREET, MELBOURNE, C.1, VICTORIA.

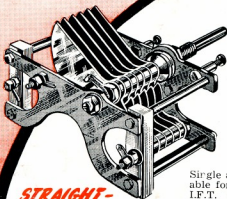
(The G.P.O. is opposite)

Phones: M 1475-76-77

PRESENTS

J.H. MAGRATH

A COMPLETE RANGE OF "Cyldon" VARIABLE CAPACITORS

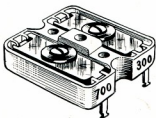


STRAIGHT- LINE CAPACITORS

Extensive range of S.L.C., S.L.F., Square Law and Logarithmic Receiving and Transmitting types; Single and Split Stator, with Ceramic and Mycalex insulation. Capacities to 1500 pF.

Communications Engineers and Manufacturers. Ask to see the complete range of Cyldon Capacitors. There is a unit to suit your particular requirement.

MICA DIALECTRIC TRIMMERS

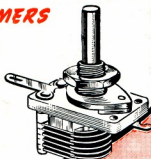
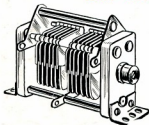


Single and multi units available for all types of coil and I.F.T. applications, with a variety of mountings. Ceramic insulation.



Semi-fixed and panel mounting types. Capacities to 30 pF. Ceramic insulation. Single or Split Stator types. Specially suited to V.H.F. work.

AIR TRIMMERS



Your Radio Enthusiasts' Supply Store extends to all Readers their Best Wishes for a Happy and Successful New Year.

SOLE AUST. CONCESSIONAIRES!
Write us re any of your problems on Variable Capacitors.

J.H. MAGRATH & Co.

208 LITTLE LONSDALE ST., MELBOURNE